Delivered via email to Laura.Galli@deq.virginia.gov

December 21, 2015

Laura Galli
Dept of Environmental Quality
4949A Cox Road
Glen Allen, VA 23060

RE: King William STP VA0088102 Water Reclamation and Reuse Addendum

Dear Ms. Galli:

Per your request on December 8, 2015 HRSD has compiled a complete Water Reclamation and Reuse Addendum for the HRSD King William STP, presenting the final version of segments edited after the original submittal on May 12.

HRSD has entered into an agreement with Nestle Purina Cat Littler Production Facility to provide reclaimed water for industrial use at their facility. Nestle Purina has completed the facilities needed to receive the reclaimed water which will supplement the ground water used in the production of cat litter. HRSD is finalizing the construction of the pumping station, force main, and associated facilities needed to transport the reclaimed water to the Nestle Purina facility.

Initially, the reuse project will reduce the amount of groundwater used by Nestle Purina by approximately 25 percent. The pumping facilities are designed to accommodate the full design flow capacity of the King William STP which is 0.10 MGD. As flows increase, this project will further reduce the amount of groundwater withdrawn, thereby reducing impact on the aquifer.

Please contact me if you have any questions.

Sincerely,

Jamie S. Heisig-Mitchell

Jamie S. Heisig-Mitchell
Chief of Technical Services Division

Enclosures

Cumulative Impact Analysis for Hampton Roads Sanitation District – King William Reuse Project

Brian McGurk, DEQ Office of Water Supply

June 29, 2015

Background

The Hampton Roads Sanitation District (HRSD) has proposed a water reclamation and reuse project for which treated effluent from the HRSD King William Wastewater Treatment Plant (WWTP) that is currently discharged to Moncuin Creek in King William County would be diverted for reuse at the nearby Nestle Purina Kitty Litter Facility (NPF). The diverted reuse water would be consumed completely by the manufacturing process at NPF; therefore the diversion would result in nearly 100% consumptive use of the wastewater, except for short-term (several hours per week) shutdowns and occasional longer maintenance shutdowns of 4-5 days length.

HRSD requested a determination by staff of the Virginia Department of Environmental Quality Office of Water Supply (DEQ-OWS) regarding the need for a Cumulative Impact Analysis (CIA) to estimate the effect of the proposed reduction of wastewater discharge to the receiving stream. DEQ-OWS staff reviewed the information supplied by HRSD regarding the project and concluded that a CIA was needed because of the scale of the reduction in terms of the estimated rates of flow in the receiving stream during low-flow periods.

The Virginia Pollutant Discharge Elimination System (VPDES) permit for the WWTP (VA008102) lists its outfall location as latitude 37.707 N, longitude -77.14376 W. The permit does not contain a limit on the rate of discharge, but lists the plant design capacity as 0.1 million gallons per day (mgd), or 0.155 cubic ft per second (cfs). The monthly average discharge rates reported to DEQ-OWS by HRSD for this outfall for the 2010 through 2014 period averaged slightly greater than 34,000 gallons per day (0.034 mgd). HRSD reported that the average monthly flow from the WWTP during 2014 was 0.035 mgd. The outfall discharges to a nontidal reach of Moncuin Creek, which flows into the upper tidal reach of the Pamunkey River (Figure 1).

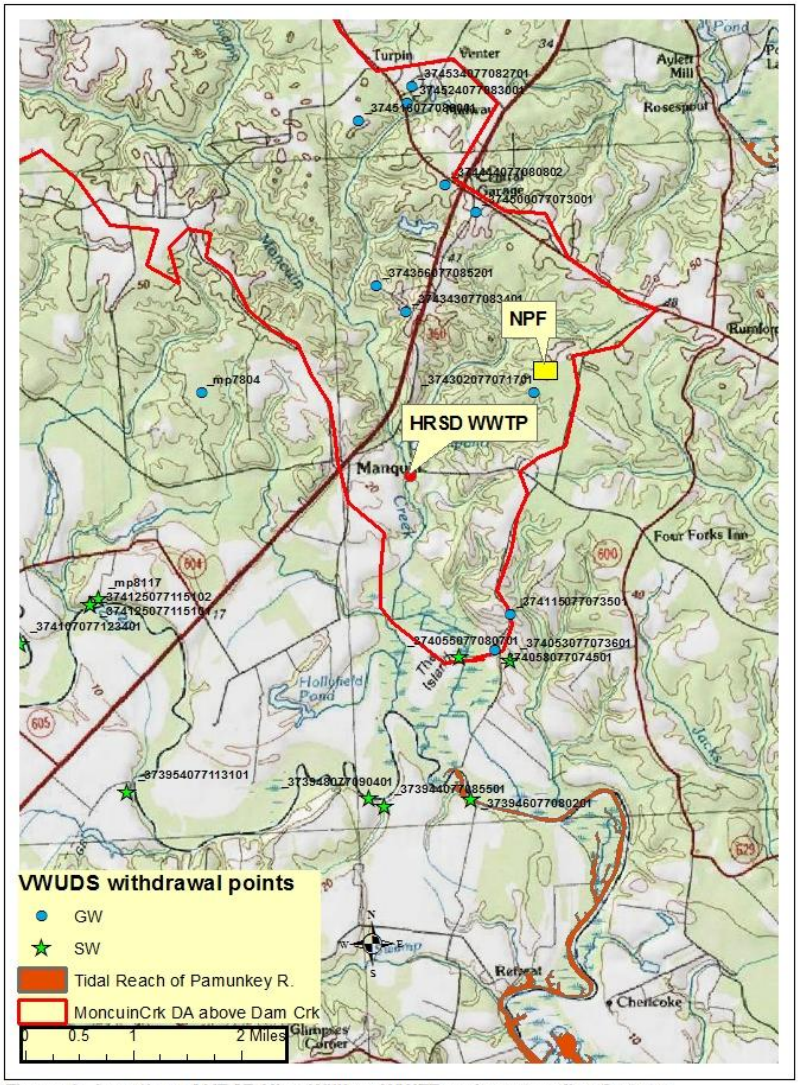


Figure 1: Location of HRSD King William WWTP and surrounding features

Streamflows

There are no available stream discharge measurements for Moncuin Creek. However, daily discharge data are available from the Totopotomoy Creek near Studley gaging station (No. 01673550). This gaging station measures stream discharge from a portion of Totopotomoy Creek, which is another nontidal tributary to the lower Pamunkey River draining a portion of the coastal plain with topography similar to that around Moncuin Creek. Station 01673550 is located in Hanover County several miles west of the WWTP and has a drainage area (25.5 mi^2) that is very similar to that estimated for the area upstream of the WWTP outfall (23.56 mi^2).

Daily average stream flow in Moncuin Creek at the outfall location was estimated based on the following drainage area adjustment in equation (1):

Equation 1: $Q_{moncuin} = DA_{moncuin} * (Q_{01673550}/DA_{01673550})$, where

$Q_{moncuin}$ = estimated streamflow just upstream of the WWTP outfall (cfs)

$Q_{01673550}$ = reported flow at gaging station 01673550 (cfs)

$DA_{moncuin}$ = drainage area upstream of the WWTP outfall (mi^2)

$DA_{01673550}$ = drainage area upstream of gaging station 01673550 (mi^2).

The recorded monthly minimums of average daily flow at gaging station 01673550 equaled zero for July and August and were less than 0.5 cfs for June, September and October (01673550 flow percentiles), and accordingly, the estimated monthly minimums of average daily flow at the outfall location calculated using the above equation are very similar because of the closeness in drainage areas.

The 7-day averaged low flow with a 10-year return interval ($7Q_{10}$) calculated by Austin et al (2011) for flow at gaging station 01673500 is 0.38 cfs. As one might expect from the similarity in drainage areas, the $7Q_{10}$ value estimated for Moncuin Creek at the WWTP outfall reported in the Fact Sheet for the January 1, 2015 reissuance of VPDES permit VA008102 was estimated to be 0.35 cfs. The same Fact Sheet reported a one-day low flow with a 10-year return interval ($1Q_{10}$) of 0.24 cfs.

Austin et al (2011) also listed regional regression equations that can be used for estimating low flow statistics of ungaged streams in the Virginia Coastal Plain. Although Austin et al (2011) did not produce an equation for estimating the $7Q_{10}$ of ungaged streams in the Virginia Coastal Plain, they did produce an equation for estimating the 7-day averaged low-flow (in cfs) with a 2 year return interval. This equation was used to estimate the $7Q_{(2)}$ for Moncuin Creek at the outfall location:

Equation 2: $Log107Q_{(2)} = -1.106 + 0.868 * Log10 (DA_{Moncuin})$, where

$DA_{moncuin}$ = drainage area upstream of the WWTP outfall (mi^2); and

$= -1.106 + 0.868 * Log10(23.56)$

$= -1.106 + 0.868 * 1.372$

$= 0.085;$

Therefore: $7Q_{(2)} = 10^{(0.085)} = 1.22$ cfs

(Equation 2 can be found in Table 10 of Austin et al (2011).

Because the drainage area of the outfall is close to that for gaging station 01673550, it is reasonable to assume that streamflow at the outfall could potentially fall below the average discharge rate from the outfall during severe drought events. The low flow estimation for the Moncuin Creek basin suggests that 7-day average flows at the outfall may drop to 1.22 cfs, or approximately 8 times the plant's design discharge rate of 0.155 cfs, every 2 years.

Methodology and Assumptions:

The issue to be evaluated is whether the proposed diversion of treated wastewater from Moncuin Creek can cause negative impacts to instream and offstream beneficial uses. Instream beneficial uses include, but are not limited to, the protection of fish and wildlife resources and habitat, maintenance of waste assimilation, recreation, navigation, and cultural and aesthetic values. Offstream beneficial uses include, but are not limited to, domestic (including public water supply), agricultural uses, electric power generation, commercial, and industrial uses (COV § 62.1-44.3). The design flow (0.155 cfs) exceeds 10% of the estimated streamflow at the outfall only during dry conditions (slightly more than 5% of the time during July, August and September). Therefore, the analysis focused upon the potential for impacts during low-flow conditions only.

The WWTP outfall is located in relatively close proximity to the mouth of Moncuin Creek (approximately 2 miles upstream). The available data indicate that streamflow between the WWTP outfall and the confluence of Moncuin Creek and the Pamunkey River drops to approximately 1 cfs periodically and may be much lower during drought events. It is reasonable to assume that fishery and benthic habitats, as well as recreational users, in this stretch of Moncuin Creek have adjusted to periodic low flow events and that the additional lowering of flow would not affect instream uses. The proposed diversion would make up a significant portion of the stream flow only during relatively short-term, infrequent drought conditions. Therefore, it was assumed that the diversion would be too small to affect instream uses within this short stream reach.

The analysis focused upon the potential effect of the proposed diversion upon offstream beneficial uses. The potential effects upon downstream withdrawals from the Pamunkey River below Moncuin Creek were not considered because the design flow rate of the outfall is less than 1 percent of the instantaneous minimum flow at gaging station 01673000, located on the Pamunkey River more than 15 miles upstream of the mouth of Moncuin Creek (12.0 cfs). It is reasonable is assume that the outfall's percentage of the instantaneous minimum flow in the Pamunkey downstream of Moncuin Creek would therefore be much lower than 1 percent.

Only one downstream surface water withdrawal point on Moncuin Creek was identified from the Virginia Water Users Database System (VWUDS). This is a surface water intake reportedly used to water livestock at Pampatike Hill Farm (VWUDS userid no. 5815, MPID 374055077080701). The source for this withdrawal was reported in VWUDS as "Dam Creek" and it is located at a low dam on Moncuin Creek, just upstream of the tidal section near the mouth of the creek (Figure 1). Withdrawals from this user were reported to VWUDS sporadically, beginning in 1996 and ending in 2008. Mr. Garth Weimer, the owner of Pampatike Hill Farm, indicated during a telephone conversation that while the intake has not been used recently, it is still in existence. Withdrawal from this intake supplements irrigation needs for the farm's cattle operation during dry periods. The maximum monthly withdrawal volume reported from this MPID was 0.6 million gallons (MG) during July, August and September, 2007. The maximum daily withdrawal volume reported was 0.03 million gallons (0.046 cfs), which is approximately equal to the average discharge reported for the HRSD outfall. A Virginia Water Protection (VWP) permit exclusion form for MPID 374055077080701 was submitted on which it was reported that the withdrawal was initiated on July 1, 1988. However, no maximum capacity information was provided on the form.

The general question addressed by the analysis was: "Could the diversion negatively affect the ability of this downstream user to obtain water during drought conditions?" However, because the estimated flow in Moncuin Creek is zero or less than the HRSD plant's design flow during occasional drought periods, the more specific question addressed by the analysis was: "What is the increase in the number of days that the downstream withdrawal cannot operate due to reduced low flows caused by the diversion of discharge from the WWTP?

To address this question, flow in Moncuin Creek at the location of MPID 374055077080701 was estimated using the following two methods: 1) adjustment of data from gaging station 01673550 using the same equation as above with the drainage area upstream of the withdrawal point (approximately 25.9 mi^2); and 2) the VaHydro water balance model using the WOOOMM modeling platform. The number of days during the simulation period using method 1) equaled the withdrawal reporting period for MPID 374055077080701 (1996 through 2008). The simulation period for method 2) was 1998 through 2005. Both simulations captured the low-flow conditions experienced during the 2001-2002 severe drought period.

For each simulation, the number of days during which the maximum reported withdrawal of 0.046 cfs exceeded 10% and 50% of the estimated streamflow at the intake were determined for 1) no diversion of discharge from the HSRD plant located upstream, and 2) a diversion of the discharge from the HRSD plant equal to both the design rate of 0.1 mgd (0.155 cfs) and the currently reported rate of 0.035 mgd (0.054 cfs). HRSD reported that the NPF operates only 6 days per week. Therefore, discharge to Moncuin Creek would always occur at least once per week when regular diversions of wastewater to NPF are occurring. Therefore, the second scenario included discharge of wastewater to Moncuin Creek 4 times per month.

The specific assumptions made for the analysis include the following:

- The streamflow estimations based upon data from gaging station 01673550 and the VaHydro modeling system adequately represent streamflow in Moncuin Creek, including WWTP discharge
- There is no tidal influence on Moncuin Creek streamflow at the location of the MPID 374055077080701 intake
- All WWTP discharge would be available at the downstream intake (i.e., there are no other withdrawals from Moncuin Creek downstream of the WWTP)
- The 1996-2008 simulation time period adequately represents a range of typical flow conditions in Moncuin Creek, including both drought and normal conditions
- The surface water withdrawal at MPID 374055077080701 cannot operate when streamflow is less than twice the maximum reported withdrawal rate of 0.03 mgd (0.046 cfs).

Results

With the WWTP discharging at the current rate of 0.035 mgd (no diversion to NPF), the maximum withdrawal at MPID 374055077080701 would exceed 10% of streamflow during 84 days using gaging station 01673550 to estimate streamflow and 59 days using VaHydro (Table 1). With wastewater discharge at the design rate of 0.1 mgd and no diversion to NPF, the withdrawal would exceed 10% of streamflow during 69 days (surrogate gage) or 46 days (VaHydro) . Estimated streamflow with wastewater discharge at 0.035 mgd without diversion to NPF falls below twice the reported maximum withdrawal for 40 days using the surrogate gage . All of these days would occur during July and August of the drought of record period in 2002. During this period, the wastewater discharge would actually make up 100% of estimated streamflow (zero flow from upstream of the WWTP) for 35 days. Streamflow that includes wastewater discharge at the design rate would not fall below 0.06 mgd (twice the maximum withdrawal rate) using either method of streamflow estimation, even during the drought of record in 2002.

Wastewater diversions of 0.035 mgd would result in zero to 7 additional days, respectively, where the downstream withdrawal would exceed 10% (Table 2). Diversion at the design rate (0.1 mgd) would produce 15 to 17 additional days where the downstream withdrawal would exceed 10%.

Wastewater diversion at the current rate could cause up to 5 additional days where the downstream withdrawal would exceed 50% of streamflow (Table 2). Diversion at the design rate of 0.1 mgd could result in up to 39 additional days where the withdrawal would exceed 50% of streamflow because the WWTP discharge can reach 100% of flow in the stream during extreme drought periods. All of the 50% exceedance events at either the current rate or the design rate would occur during a drought of record period like 2001-2002.

	10% Exceedance		50% Exceedance	
Reuse Scenario	Surrogate gage 01673550	VaHydro	Surrogate gage 01673550	VaHydro
Discharge at current rate (0.035 mgd), no diversion	84 (71%)	59 (73%)	40 (100)	0
Discharge at design rate (0.1 mgd), no diversion	69 (91%)	46 (74%)	0	0
Diversion of discharge at current average rate (0.035 mgd)	84 (71%)	66 (71%)	45 (100)	0
Diversion discharge at design rate (0.1 mgd)	84 (71%)	63 (71%)	39 (100)	0

Table 1: Number of days that a withdrawal rate of 0.03 mgd would exceed 10% and 50% of streamflow in Moncuin Creek at MPID 374055077080701 (Dam Creek), located downstream of the HRSD King William WWTP.
Surrogate gage: station 01673550 used to estimate streamflow;
VaHydro: streamflow modeled using VaHydro water balance model
Diversion: Discharge from HRSD King William WWTP diverted to NPF
Numbers in parentheses indicate the percentage of days that occurred during 2001 & 2002.

	10% Exceedance		50% Exceedance	
Reuse Scenario	Surrogate gage 01673550	VaHydro	Surrogate gage 01673550	VaHydro
Diversion at current average rate (0.035 mgd)	0	7	5	0
Diversion at plant design rate (0.1 mgd)	15	17	39	0

Table 2: Number of additional days that diversion of discharge from the HRSD King William WWTP to NPF would cause withdrawal at the Dam Creek intake to exceed 10% and 50% of streamflow
Surrogate gage: station 01673550 used to estimate streamflow;
VaHydro: streamflow modeled using VaHydro water balance model
Diversion: Discharge from HRSD King William WWTP diverted to NPF
NPF: Nestle Purina Kitty Litter Facility

Conclusions and Recommendations

The analysis indicated that diversion of discharge from the HRSD King William WWTP at the current rate of 0.035 mgd may cause up to 7 additional days during which the maximum withdrawal rate from the downstream surface water withdrawal intake would exceed 10% of flow in Moncuin Creek. The diversion may also result in up to 5 additional days during which the maximum withdrawal from this intake would exceed 50% of streamflow, possibly prohibiting withdrawal. Diversion at the WWTP design rate of 0.1 mgd might result in up to 17 and 39 additional days during which the maximum withdrawal from the downstream intake would exceed 10% and 50% of flow in Moncuin Creek, respectively.

Periods of restricted or prohibited withdrawal from the downstream intake would most likely occur during severe, extended drought periods, such as that which occurred during the 2001-2002 drought of record. The effect of the diversion upon the downstream withdrawal would be to extend the periods of low flow in the stream during severe droughts. The diversion would be much less likely to lengthen the low-flow periods that occur during normal climatic years. However, the comparing the estimated $7Q_2$ and $7Q_{10}$ values for the WWTP outfall location suggests that extended low flows could occur for brief periods during less severe droughts with a recurrence interval of less than 10 years.

Recommendations regarding the proposed diversion for reuse at NPF include the following:

- Conduct daily monitoring of WWTP discharges, diversion of WWTP discharges, and estimated streamflow at the WWTP outfall
- The diversion of WWTP discharge should be prohibited whenever the sum of the estimated streamflow at a point just above the WWTP plus the wastewater diversion falls below a value that is twice the maximum reported withdrawal from the downstream intake at Pampatike Hill Farm (0.06 mgd, or 0.093 cfs).

Reference Cited

Austin, S.H., Krstolic, J.L., and Wiegand, Ute, 2011, Low-flow characteristics of Virginia streams: U.S. Geological Survey Scientific Investigations Report 2011–5143, 122 p. + 9 tables on CD. (Also available online at http://pubs.usgs.gov/sir/2011/5143/.)

WATER RECLAMATION AND REUSE ADDENDUM TO AN APPLICATION FOR A VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT OR A VIRGINIA POLLUTION ABATEMENT PERMIT

A. Applicant Information

1. Facility	Name	King William STP		
	Location (street, route no. or other identifier)	542 Acquinton Church Road		
	Countyor city	King William		
	Latititude	37 42' 24"	Longitude	77 08' 39"
2. Owner	Name	Hampton Roads Sanitation District		
	Mailing address (street or P.O. box, city, state and zip code)	1434 Air Rail Avenue Virginia Beach, VA 23455		
	Telephone number	757-460-4220		
	Fax number	757-318-6452		
	E-mail address	jmitchell@hrsd.com		
3. Operator*	Name	Same as owner		
	Mailing address (street or P.O. box, city, state and zip code)			
	Telephone number			
	Fax number			
	E-mail address			

* If the operator of the facility is not the owner, complete A.3.

B. Permitting Information

1. This addendum is for a <u>new</u> (check all that apply):

   ☒ Reclamation system.
   ☐ Satellite reclamation system.
   ☐ Reclaimed water distribution system.
   ☐ End user[1].
   ☐ Not applicable. Proceed to B.2.

   Will the above new system or systems or end user be an expansion or modification[2] to an existing permitted system or end user[1]? (See numbered footnotes on the last page of the addendum)

   ☒ No. Proceed to item B.3.
   ☐ Yes. Proceed to item B.2.

2. This addendum is for an <u>existing</u> (check all that apply):

☐ Reclamation system.
☐ Satellite reclamation system.
☐ Reclaimed water distribution system.
☐ End user[1].

a. Provide the following information for each existing system or end user[1]:

System or End User[1] Name	Type of current permit issued (VPDES or VPA)	Permit Number	Permit Expiration Date

b. List by name all existing permitted systems or end users[1] in B.2.a of the addendum to be expanded or modified[2].

3. For reclamation systems, satellite reclamation systems, reclaimed water distribution systems and end users[1] that are (i) new, (ii) existing but unpermitted, or (iii) existing, permitted and to be expanded or modified[2]:

a. Is or will there be any combination of the systems, end users[1], or wastewater treatment works under common ownership or management, including those physically separated from each other?

☒ No. Proceed to B.3.d.
☐ Yes. Provide the following information for all systems, end users[1] or wastewater treatment works under common ownership or management:

Designation of Facility*	Name of System, End User[1] or Wastewater Treatment Works	Name of Common Ownership or Management

* Designation of facility refers to reclamation system, satellite reclamation system, reclaimed water distribution system, end user[1] or wastewater treatment works.

b. Identify by name any combination of the systems (i.e., reclamation, satellite reclamation, reclaimed water distribution), end users[1] or wastewater treatment works with common ownership or management listed in B.3.a. to be covered by one permit. (See addendum instructions)

c. Identify by name any of the systems, end users[1] or wastewater treatment works with common ownership or management listed in B.3.a. to be covered by separate permits.

d. Will a wastewater treatment works, reclamation system, satellite reclamation system or reclaimed water distribution system provide reclaimed water to irrigate property under common ownership or management with that wastewater treatment works, reclamation system, satellite reclamation system or reclaimed water distribution system?

☒ No.
☐ Yes. Provide the following information

Name of Wastewater Treatment Works or System (Reclamation, Satellite Reclamation, Reclaimed Water Distribution)	Location of Irrigation Property*

* Refers to irrigation property that receives or will receive reclaimed water from and is under common ownership or management with the named wastewater treatment works or system in the first column. (See addendum instructions)

e. Will a reclaimed water distribution system that receives reclaimed water from a reclamation system or satellite reclamation system under separate ownership from the reclaimed water distribution system, distribute reclaimed water to end users other than the owner or management of the reclaimed water distribution system?

☐ Yes.
☒ No.

If no, will there be a service agreement established between the permittee of the reclamation system and the ownership or management of the reclaimed water distribution system?

☒ Yes.
☐ No.

4. For each end user[1.], list all the reclamation systems, satellite reclamation systems and reclaimed water distributions from which the end user[1.] will receive reclaimed water; and for each listed system, indicate the Level of reclaimed water (i.e., Level 1, Level 2 or both) that it will provide to the end user[1.] and if the end user[1.] has a service agreement or contract with that system.

Name of System (Reclamation, Satellite Reclamation, Reclaimed Water Distribution)	Level of Reclaimed Water Provided to End User[1.] (Level 1, Level 2 or both)	Service Agreement or Contract with End User[1.] (Yes/No)
King William STP	1	Yes

a. Will the end user[1.] be under common ownership or management with any of the reclamation systems, satellite reclamation systems or reclaimed water distribution systems listed above?

☒ No.
☐ Yes.

If yes, will the end user[1.] be covered by the permit of the system?

☐ No.
☐ Yes. Indicate the name of the system: _____

b. For all systems listed in B.4 with which the end user[1.] has a service agreement or contract, has the end user[1.] received notice of failure to comply with the service agreement or contract from any of these systems?

☒ No.
☐ Yes. If yes, indicate below the name(s) of the system(s) that issued notice(s) of failure to comply, the date of all notices and a brief description of cause for each notice. Additional information may be attached as necessary. If more than one system has issued a notice of failure to comply to the end user[1.], complete D.1.a, D.1.b and D.1.c; D.2 if the reuse of the end user[1.] includes irrigation, and E of the addendum. (See addendum instructions)

Name of System that Issued Notice	Date of Notice	Description of Cause for Notice

c. Will the end user[1.] blend the reclaimed water that it receives from two or more of the systems listed in B.4?

☒ No.
☐ Yes.

If yes, will the end user[1.] blend Level 1 and Level 2 reclaimed water?

☐ No.
☐ Yes.

d. Will the end user[1.] distribute an portion of the blended reclaimed water to other end users not under common ownership or management with the end user[1.]?

☒ No.
☐ Yes. If yes, complete applicable sections in C and D of this addendum. (See addendum instructions)

C. General Project Information (See addendum instructions)

For reclamation systems, satellite reclamation systems, and reclaimed water distribution systems, provide the following information. For projects that involve exclusively the distribution of reclaimed water, provide information for only items C.1., C.2., and C.6.

1. A description of the design and a site plan of each system. (See addendum instructions)

2. A general location map. (See addendum instructions)

3. Information regarding each wastewater treatment works that diverts or will divert effluent or source water to the reclamation system to be permitted.

a. Name of Wastewater Treatment Works	VPDES or VPA Permit No. of Facility	General VPDES Watershed Permit No.*
King William STP	VA0088102	VAN030052

C. General Project Information

The water reclamation project includes construction of an effluent pump station, instrumentation and controls, turbidity monitoring, electrical upgrades and a 2.5 mile long 6-inch force main and related facilities required to convey Level 1 treated effluent from HRSD's King William Sewage Treatment Plant (KWSTP) to the Nestle' Purina Cat Litter Production Facility.

The King William Wastewater Treatment Plant currently utilizes MBR technology. After the membrane filtration, UV lights provide disinfection. The last treatment stage uses two tanks, lead and lag, filled with activated carbon to enhance zinc removal efficiency. Final product flows down a cascade aerator to the outfall.

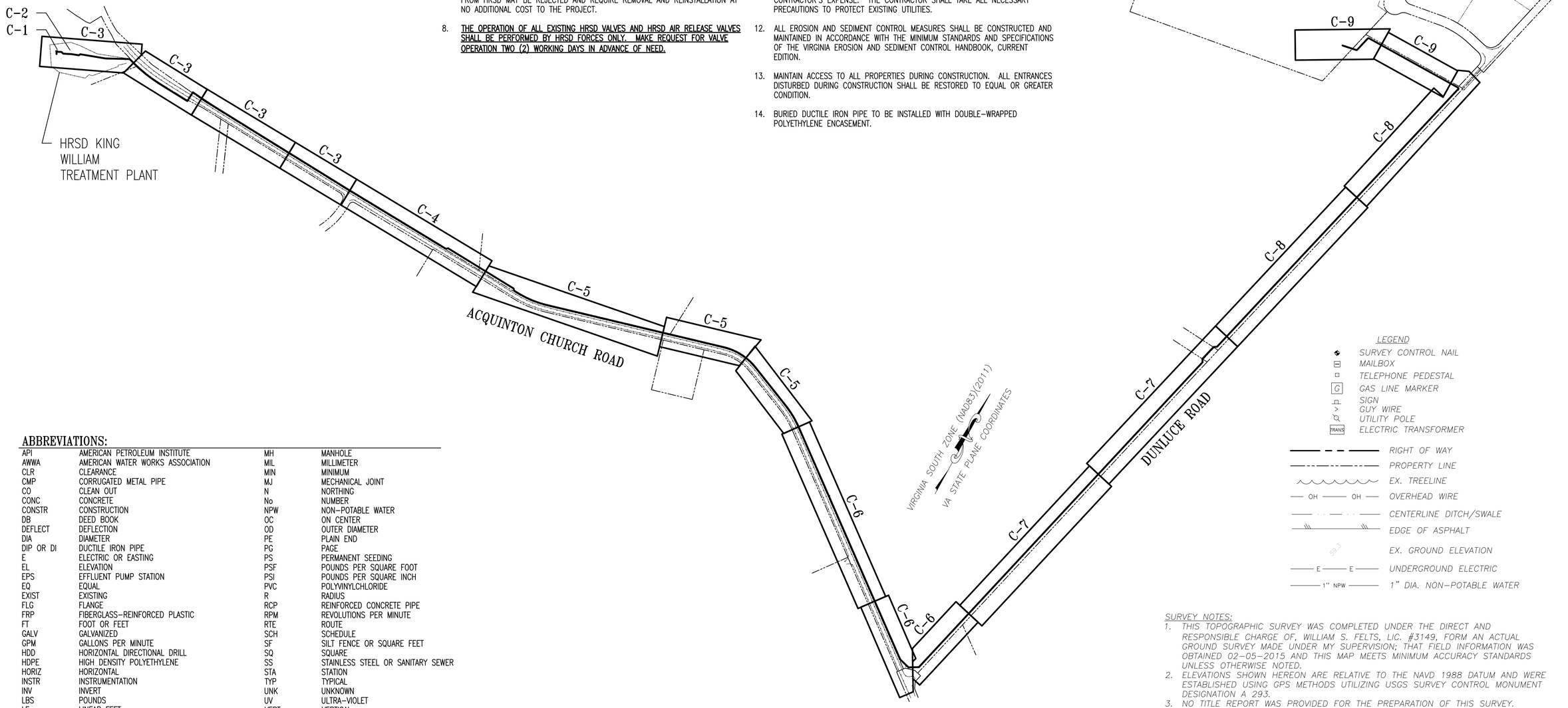
This reuse project will divert flow following the UV disinfection stage of treatment to a reuse pump station, sending it to the distribution system designated solely for Nestle Purina reuse water. HRSD will convey reclaimed water to two Nestle Purina storage tanks (50,000 gallons each) located on Nestle Purina property. The storage tanks provide mixing of reclaimed water and groundwater. Currently, Nestle Purina uses approximately 85,000 gallons of groundwater per day. HRSD can provide approximately 35,000 gallons per day of reclaimed water to offset some groundwater use. This is a consumptive reuse; all water is utilized during the production process and no water is rejected or returned to HRSD for discharge during the normal production operation. Storage and pumping facilities have already been constructed by Nestle' at their site.

The pump station will be built on the King William STP property (site plan attached). Turbidity will be monitored prior to ultraviolet disinfection as required by 9VAC25-740-80. Analysis shall be performed by a continuous, online turbidity meter equipped with an automated data logging or recording device. If the turbidity meter reads greater than 1 NTU, a signal is sent to the reuse pumps to turn them off and flow will be discharged via the permitted outfall to Moncuin Creek. HRSD staff will be notified of the turbidity reading and the flow diversion via an alarm system.

Since the plant will have the option of either sending flow to Nestle' Purina Cat Litter Production Facility or Moncuin Creek, the point of compliance for the other parameters (BOD, bacteria, and pH) will be the final effluent sampling point used for the monitoring requirements for the VPDES permit VA0088102.

GENERAL NOTES:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS.
2. CONTACT THE KING WILLIAM'S EROSION CONTROL INSPECTOR TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF ANY LAND DISTURBING ACTIVITIES.
3. CONTRACTOR SHALL COMPLY WITH THE VIRGINIA OVERHEAD HIGH VOLTAGE SAFETY ACT.
4. THE CONTRACTOR SHALL PROVIDE THE HAMPTON ROADS SANITATION DISTRICT (HRSD) FIVE (5) WORKING DAYS NOTICE PRIOR TO EXCAVATION IN THE VICINITY OF, OR BEFORE PERFORMING ANY ADJUSTMENTS TO EXISTING HRSD SANITARY SEWER FORCE MAINS.
5. HRSD 24-HOUR EMERGENCY TELEPHONE NUMBER IS AS FOLLOWS: (804) 843-2582
6. HRSD OR THEIR REPRESENTATIVE WILL BE ON SITE TO OBSERVE THE HRSD FORCE MAIN CONSTRUCTION FOR COMPLIANCE WITH THE PLANS AND SPECIFICATIONS. THEY WILL MAKE ALL COMMUNICATIONS AND RECOMMENDATIONS TO THE ENGINEER CONCERNING THE CONTRACTOR'S WORK. THE CONTRACTOR SHALL DIRECT QUESTIONS AND SUBMITTALS TO THE ENGINEER CONCERNING HRSD WORK.
7. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS TO DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THOSE NOTED ON THE CONSTRUCTION PLAN SET. ADJUSTMENTS TO THE PROPOSED DESIGN DUE TO DIFFERING FIELD CONDITIONS MUST BE APPROVED BY THE ENGINEER PRIOR TO PROCEEDING WITH THE ADJUSTMENT. DEVIATIONS FROM THE PLANS WITHOUT PRIOR WRITTEN APPROVAL FROM HRSD MAY BE REJECTED AND REQUIRE REMOVAL AND REINSTALLATION AT NO ADDITIONAL COST TO THE PROJECT.
8. THE OPERATION OF ALL EXISTING HRSD VALVES AND HRSD AIR RELEASE VALVES SHALL BE PERFORMED BY HRSD FORCES ONLY. MAKE REQUEST FOR VALVE OPERATION TWO (2) WORKING DAYS IN ADVANCE OF NEED.
9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO ALL EXISTING HRSD VALVES AND OTHER ASSOCIATED ITEMS THROUGHOUT THE DURATION OF THE PROJECT. THIS INCLUDES PROVIDING A STURDY, LEVEL PLATFORM FOR HRSD TO OPERATE THE VALVES.
10. THE LOCATIONS OF EXISTING UTILITIES AS INDICATED ON THESE DRAWINGS ARE APPROXIMATE. INSPECT THE FORCE MAIN ROUTE AND EXISTING INFORMATION AND PERFORM TEST PITS AND ANY OTHER REQUIRED INVESTIGATION PRIOR TO FORCE MAIN INSTALLATION. IF THE CONTRACTOR ENCOUNTERS CONDITIONS AT THE SITE DIFFERING FROM THOSE SHOWN ON THE DRAWINGS, HE SHALL NOTIFY THE ENGINEER IMMEDIATELY.
11. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-552-7001 OR 811 A MINIMUM OF 72 HOURS IN ADVANCE OF ANY EXCAVATION. ANY DAMAGE TO EXISTING UTILITIES WILL BE REPAIRED BY THE UTILITY OWNER AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES.
12. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, CURRENT EDITION.
13. MAINTAIN ACCESS TO ALL PROPERTIES DURING CONSTRUCTION. ALL ENTRANCES DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EQUAL OR GREATER CONDITION.
14. BURIED DUCTILE IRON PIPE TO BE INSTALLED WITH DOUBLE-WRAPPED POLYETHYLENE ENCASEMENT.



ABBREVIATIONS:

API	AMERICAN PETROLEUM INSTITUTE	MH	MANHOLE
AWWA	AMERICAN WATER WORKS ASSOCIATION	MIL	MILLIMETER
CLR	CLEARANCE	MIN	MINIMUM
CMP	CORRUGATED METAL PIPE	MJ	MECHANICAL JOINT
CO	CLEAN OUT	N	NORTHING
CONC	CONCRETE	No	NUMBER
CONSTR	CONSTRUCTION	NPW	NON-POTABLE WATER
DB	DEED BOOK	OC	ON CENTER
DEFLECT	DEFLECTION	OD	OUTER DIAMETER
DIA	DIAMETER	PE	PLAIN END
DIP OR DI	DUCTILE IRON PIPE	PG	PAGE
E	ELECTRIC OR EASTING	PS	PERMANENT SEEDING
EL	ELEVATION	PSF	POUNDS PER SQUARE FOOT
EPS	EFFLUENT PUMP STATION	PSI	POUNDS PER SQUARE INCH
EQ	EQUAL	PVC	POLYVINYLCHLORIDE
EXIST	EXISTING	R	RADIUS
FLG	FLANGE	RCP	REINFORCED CONCRETE PIPE
FRP	FIBERGLASS-REINFORCED PLASTIC	RPM	REVOLUTIONS PER MINUTE
FT	FOOT OR FEET	RTE	ROUTE
GALV	GALVANIZED	SCH	SCHEDULE
GPM	GALLONS PER MINUTE	SF	SILT FENCE OR SQUARE FEET
HDD	HORIZONTAL DIRECTIONAL DRILL	SQ	SQUARE
HDPE	HIGH DENSITY POLYETHYLENE	SS	STAINLESS STEEL OR SANITARY SEWER
HORIZ	HORIZONTAL	STA	STATION
INSTR	INSTRUMENTATION	TYP	TYPICAL
INV	INVERT	UNK	UNKNOWN
LBS	POUNDS	UV	ULTRA-VIOLET
LF	LINEAR FEET	VERT	VERTICAL
MAX	MAXIMUM	W/	WITH
MBR	MEMBRANE BIO-REACTOR		

SURVEY NOTES:

1. *THIS TOPOGRAPHIC SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF, WILLIAM S. FELTS, LIC. #3149, FORM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION; THAT FIELD INFORMATION WAS OBTAINED 02-05-2015 AND THIS MAP MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.*
2. *ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NAVD 1988 DATUM AND WERE ESTABLISHED USING GPS METHODS UTILIZING USGS SURVEY CONTROL MONUMENT DESIGNATION A 293.*
3. *NO TITLE REPORT WAS PROVIDED FOR THE PREPARATION OF THIS SURVEY.*
4. *THIS FIRM IS NOT RESPONSIBLE FOR OBJECTS AND MATERIALS THAT WERE NOT VISIBLE DURING THE TIME OF THIS SURVEY.*

HRSD Note 1: Public water supply wells, public water supply intakes, and public water supply springs are not present on the King William STP property or property owned by Nestle Purina.

HRSD Note 2: Abbreviated water balance (shall be adjusted as necessary to meet HRSD and Nestle Purina production needs)
Monday - Saturday, ~35000 gallons sent to Nestle Purina, 0 gallons sent to KW STP Outfall #001
Sunday - ~35000 gallons sent to Nestle Purina, 0 gallons sent to KW STP Outfall #001

NO.	DATE	BY	DESCRIPTION

GRAPHIC SCALES

0 150' 300' 450' 600' 900'

SCALE: 1" = 300'

Whitman, Requardt & Associates, LLP
5701 Cleveland Street, Suite 620, Virginia Beach, Virginia 23462

HRSD

SCALE: HORIZ: 1" = 300' VERT.:
DATE: APRIL 2015
DESIGNED: NLS/KNA
DRAWN: GSL
CHECKED: JAL
PROJECT NO. 19507.013

KING WILLIAM TREATMENT PLANT
EFFLUENT UTILIZATION
KING WILLIAM COUNTY, VIRGINIA

LEGEND, GENERAL NOTES, ABBREVIATIONS AND SHEET INDEX

DRAWING G-2

SHEET 2 OF 28

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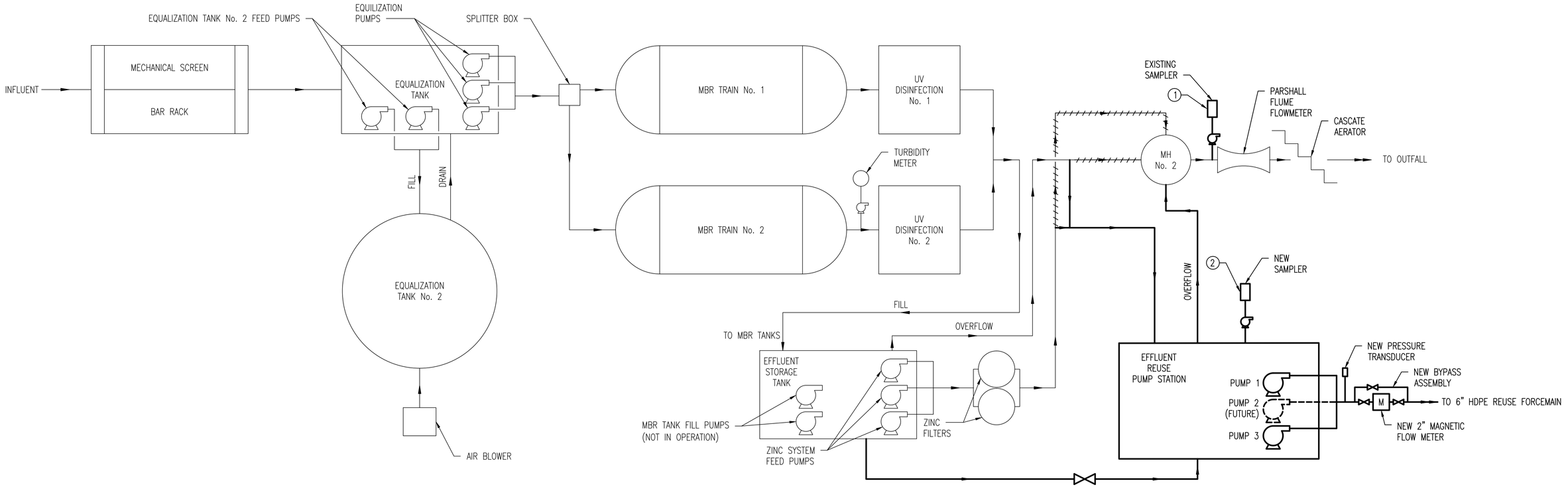
GENERAL NOTES:

1. NEW WORK SHOWN IN BOLD.
2. BASED ON RECORD DRAWINGS AND TO THE BEST INFORMATION AVAILABLE.

SPECIFIC NOTES:

(1) REMOVE AND RETURN EXISTING SAMPLER.

(2) INSTALL AND FURNISH NEW SAMPLER. SAMPLER SHALL BE ISCO 6712FR.



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NO.	DATE	BY	DESCRIPTION

GRAPHIC SCALES

NOT TO SCALE

Whitman, Requardt & Associates, LLP
5701 Cleveland Street, Suite 620, Virginia Beach, Virginia 23462

HRSD

SCALE:
HORIZ.:
VERT.:

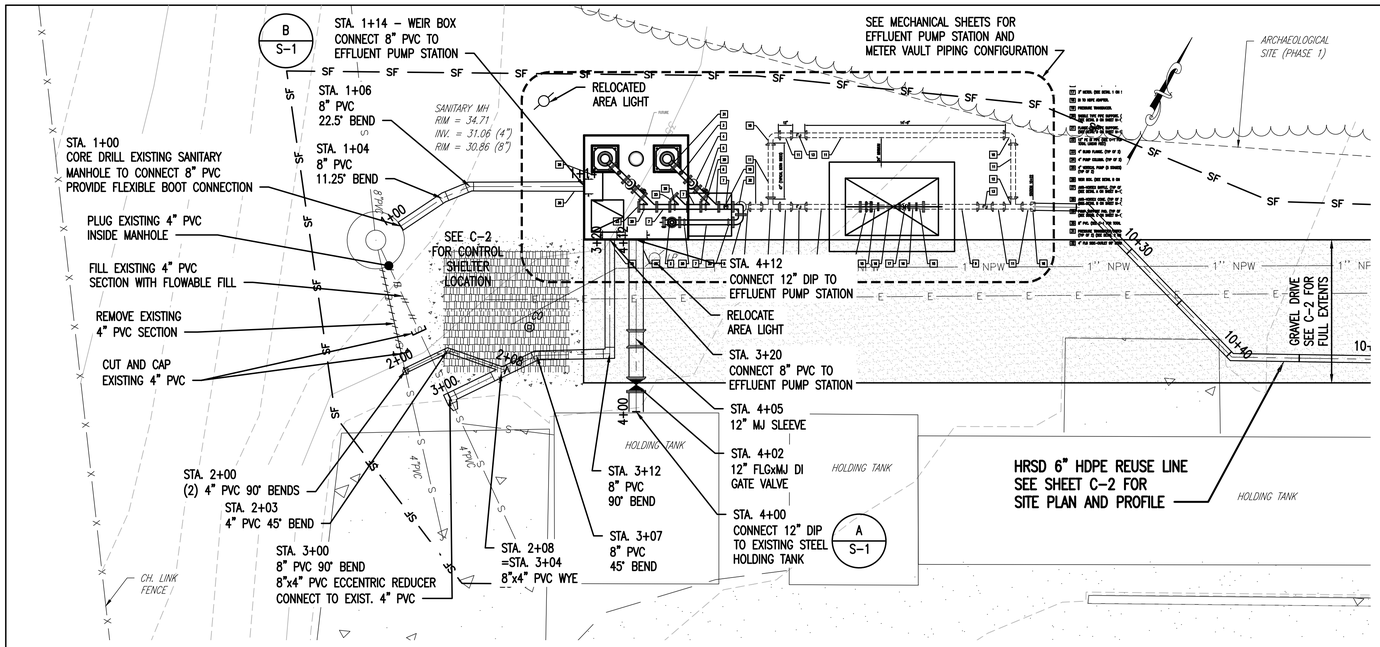
DATE: APRIL 2015
DESIGNED: NLS/KNA
DRAWN: GSL
CHECKED: JAL
PROJECT NO.: 19507.013

KING WILLIAM TREATMENT PLANT
EFFLUENT UTILIZATION
KING WILLIAM COUNTY, VIRGINIA

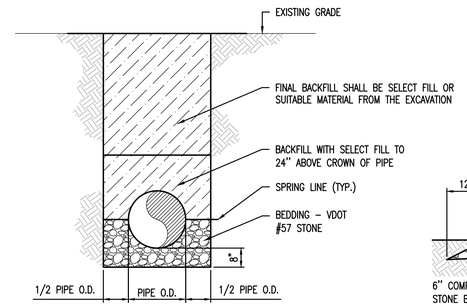
PROCESS FLOW DIAGRAM

DRAWING G-3

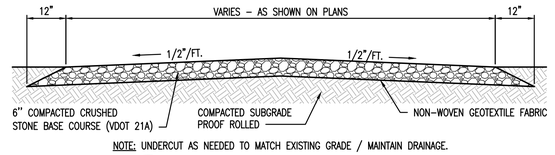
SHEET 3 OF 28



SITE PLAN
SCALE: 1" = 5'-0"

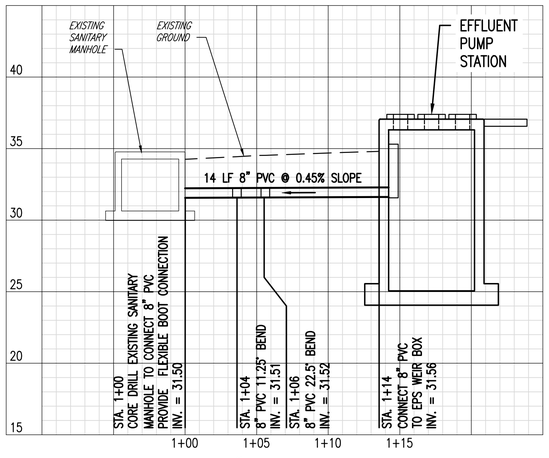


A C-1 **PIPE TRENCH DETAIL**
NOT TO SCALE

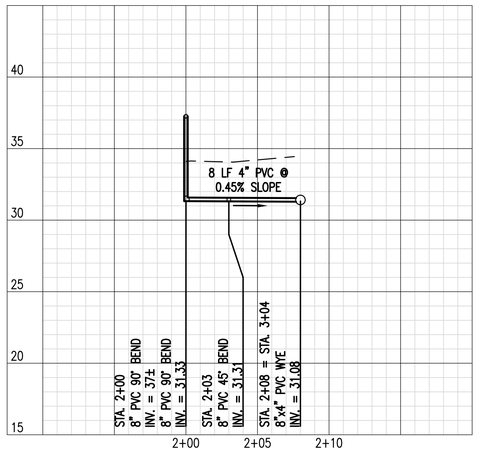


NOTE: UNDERCUT AS NEEDED TO MATCH EXISTING GRADE / MAINTAIN DRAINAGE.

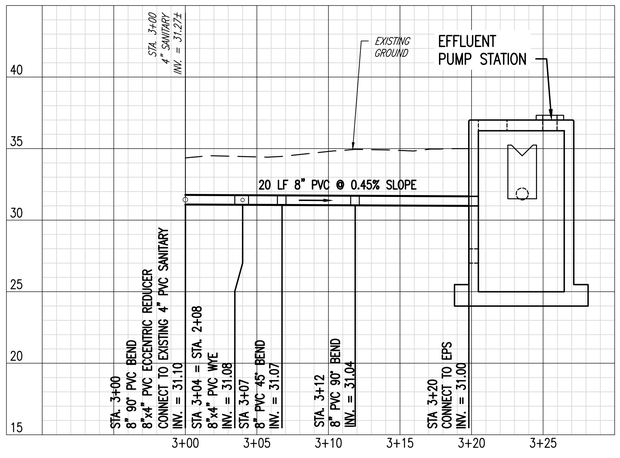
C C-1 **DRIVEWAY RESTORATION**
NOT TO SCALE



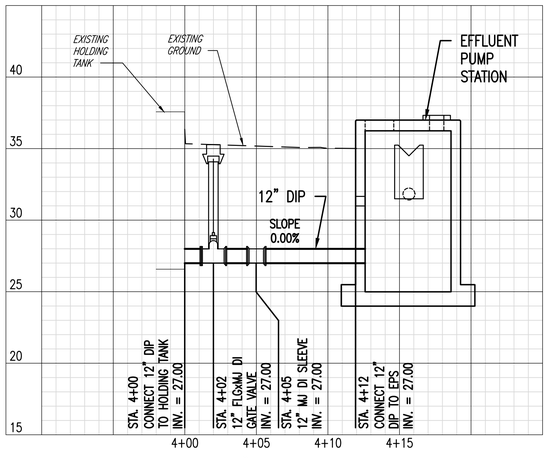
8" PVC PROFILE
STA. 1+00 TO STA. 1+14
SCALE: 1" = 5'-0"



4" PVC PROFILE
STA. 2+00 TO STA. 2+08
SCALE: 1" = 5'-0"



8" PVC PROFILE
STA. 3+00 TO STA. 3+20
SCALE: 1" = 5'-0"



12" DIP PROFILE
STA. 4+00 TO STA. 4+12
SCALE: 1" = 5'-0"

NO.	DATE	BY	DESCRIPTION

GRAPHIC SCALES
0 5' 10' 15'
SCALE: 1" = 5'

Whitman, Requardt & Associates, LLP
5701 Cleveland Street, Suite 620, Virginia Beach, Virginia 23462

HRSD

SCALE:
HORIZ: 1" = 5'
VERT.:

DATE: APRIL 2015
DESIGNED: NLS/KNA
DRAWN: GSL
CHECKED: JAL
PROJECT NO. 19507.013

KING WILLIAM TREATMENT PLANT
EFFLUENT UTILIZATION
KING WILLIAM COUNTY, VIRGINIA

SITE PLAN, PROFILES AND DETAILS

DRAWING
C-1

SHEET
4 OF 28

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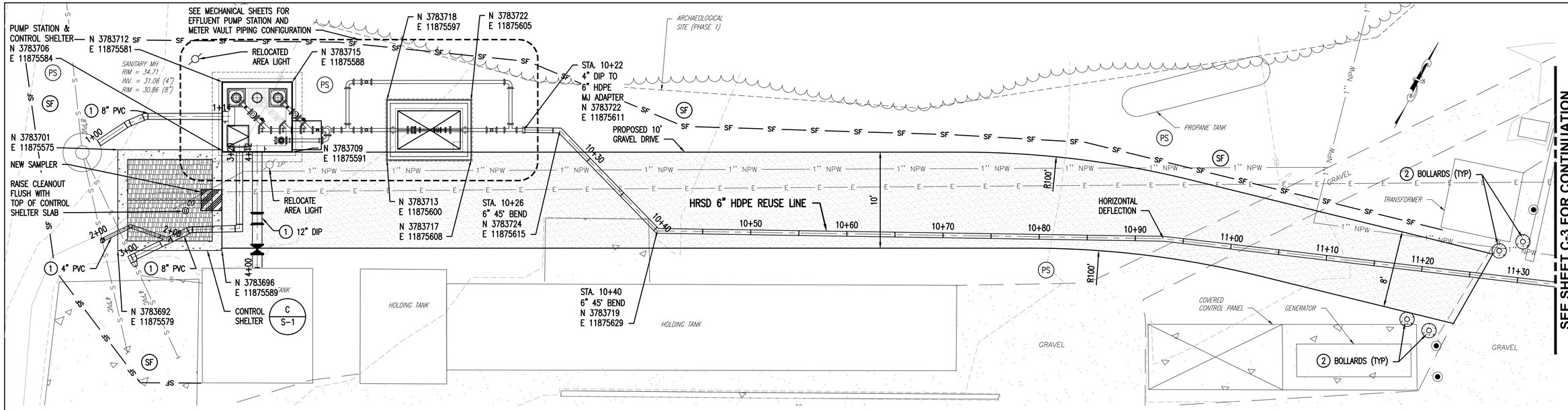
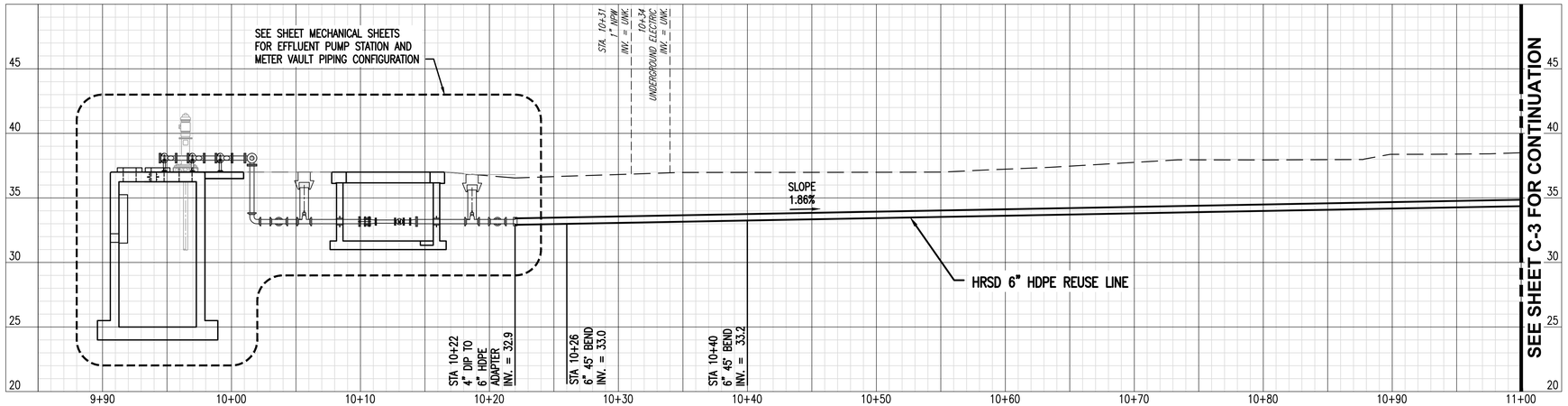


SITE PLAN

SCALE: 1" = 5'-0"



ENLARGED PROFILE

SCALE: 1" = 5'-0"

GENERAL NOTES

1 SEE ELECTRICAL SHEETS FOR ELECTRICAL SITE PLAN.

2 SEE EROSION AND SEDIMENT CONTROL NOTES AND DETAILS ON SHEET D-1.

SPECIFIC NOTES

(1) SEE SHEET C-1 FOR SITE PLAN PROFILES AND DETAILS.

(2) SEE DETAIL 19 ON SHEET D-2.

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NO.	DATE	BY	DESCRIPTION

GRAPHIC SCALES

0 5' 10' 15'

SCALE: 1" = 5'

Whitman, Requardt & Associates, LLP
5701 Cleveland Street, Suite 620, Virginia Beach, Virginia 23462

HRSD

SCALE: HORIZ.: 1" = 5' VERT.:

DATE: APRIL 2015
DESIGNED: NLS/KNA
DRAWN: GSL
CHECKED: JAL
PROJECT NO.: 19507.013

KING WILLIAM TREATMENT PLANT
EFFLUENT UTILIZATION
KING WILLIAM COUNTY, VIRGINIA

SITE PLAN AND PROFILE

DRAWING C-2

SHEET 5 OF 28

* Refers to a permit issued in accordance with the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia (9VAC25-820), and applies only to facilities with existing individual VPDES permits.

b. List all unit wastewater treatment processes used at each wastewater treatment works prior to diversion to the reclamation system.

Screening, equalization basin, membrane bioreactor with filtration, UV disinfection

c. For only those wastewater treatment works listed in C.3.a with one or more significant industrial users (SIUs) indirectly discharging to the treatment works, provide the following information. (See addendum instructions)

Name of Wastewater Treatment Works	**Name of All SIUs Indirectly Discharging to Each Wastewater Treatment Works**	**Approved Pretreatment Program (Yes/No/NA)***

* Refers to a pretreatment program developed in accordance with the VPDES Permit Regulation (9VAC25-31) or an equivalent program developed in accordance with the Water Reclamation and Reuse Regulation (9VAC25-740) for treatment works with SIUs, and approved by the Department of Environmental Quality. "NA" means "not applicable".

d. Provide analyses of the effluent or source water to be diverted by each wastewater treatment works to the reclamation system. (See addendum instructions)

See attached King William 2014 DMR summary and 2014 VPDES permit application data

4. Information regarding the sewage collections system that diverts or will divert sewage to the satellite reclamation system to be permitted.

a. The name of the sewage collection system and the owner of that system.

Not Applicable

b. For the treatment works at the end of the sewage collection system that receives or will receive all remaining sewage, provide:

Name of the treatment works: _____

VPDES or VPA permit no.: _____

c. Provide the following information for each SIU that discharges directly or indirectly to the sewage collection pipeline from which sewage or municipal wastewater is or will be diverted to the satellite reclamation system, excluding any downstream SIUs whose discharge has no potential to backflow to the satellite reclamation system intake.

KING WILLIAM STP VA0088102
2014 DMR SUMMARY

Parameter		Permit Limit	Jan Eff	Feb Eff	Mar Eff	Apr Eff	May Eff	Jun Eff	Jul Eff	Aug Eff	Sep Eff	Oct Eff	Nov Eff	Dec Eff	# of Vio.
Flow (MGD)		NL	0.034	0.033	0.036	0.038	0.039	0.033	0.030	0.032	0.034	0.033	0.035	0.037	
CBOD (mg/L)	Month Avg	13	<2	<2	<2	1	<2	<2	<2	<2	<2	<2	<2	<2	0
	Max Week	20	<2	<2	<2	4	<2	<2	<2	<2	<2	<2	<2	<2	0
TSS (mg/L)	Month Avg	30	<1.0	<1.0	0.13	0.11	<1.0	<1.0	<1.0	<1.0	0.14	<1.0	<1.0	<1.0	0
	Max Week	45	<1.0	<1.0	0.50	0.55	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0
TKN (mg/l)	Month Avg	3.0	2.4	1.6	0.89	0.87	0.87	0.88	0.85	0.66	0.32	<0.50	0.22	0.29	0
	Max Week	4.5	0.62	0.97	0.94	1.1	1.0	1.0	1.2	0.94	0.32	<0.50	0.33	0.56	0
Total Phosphorus (mg/L)	Month Avg	0.30	0.01	0.02	0.25	0.03	0.04	0.11	0.08	0.09	0.17	0.05	0.03	0.03	0
Total Nitrogen (mg/l)	Month Avg	4.0	1.8	0.82	0.89	0.87	0.94	0.95	0.89	0.69	0.53	0.34	1.70	1.1	0
E.Coli/100 ml.	Month Avg	126	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0
pH (SU)	Max	9.0	7.6	7.4	7.3	7.5	7.6	7.6	7.5	7.8	8.0	7.7	7.6	7.4	0
	Min	6.0	7.1	6.9	7.0	7.1	7.3	7.1	7.2	7.3	7.3	7.3	7.2	7.0	0
Dissolved Oxygen (mg/l)	Min	5.0	7.5	7.8	7.2	7.4	7.2	5.5	5.6	6.6	6.0	6.1	6.6	7.4	0

CENTRAL ENVIRONMENTAL LABORATORY ANALYTICAL REPORT

VA Laboratory ID 460011

HRSD

Job ID: HRSD_PA-062414-480

Report Serial No.: 2014-1341

Sample ID: KW_FNE-G-062514-1
Sample Date: 6/25/2014
Customer Sample ID: King William TP - Final Effluent
Sample ID: 269050
Sample Sub-Type: SAMP

Analyte	Method	Unit	Result	Flag	LOQ	Analyst	Analysis Date	Analysis Time
Total Cyanide	Lachat 10-204-00-1X	ug/l	<10		10	AMOORE	07/03/14	08:49
HEM	EPA 1664B	mg/l	<5.0		5.0	RMORGAN	07/01/14	08:10
1,1,2,2-Tetrachloroethane	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
1,1,2-Trichloroethane	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
1,1-Dichloroethylene	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
1,2-Dichlorobenzene	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
1,2-Dichloroethane	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
1,2-Dichloropropane	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
1,3-Dichlorobenzene	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
1,3-Dichloropropene (cis+trans)	EPA 624	ug/l	<20.0		20.0	SLOPEZ	06/26/14	17:21
1,4-Dichlorobenzene	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Acrolein	EPA 624	ug/l	<50.0		50.0	SLOPEZ	06/26/14	16:52
Acrylonitrile	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Benzene	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Bromodichloromethane	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Bromoform	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Bromomethane	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Carbon Tetrachloride	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21

Notes

LOQ is lowest concentration at which quantitation is demonstrated.
**Analyte is not included in the HRSD CEL VELAP scope of accreditation*

CENTRAL ENVIRONMENTAL LABORATORY ANALYTICAL REPORT

VA Laboratory ID 460011

HRSD

Job ID: HRSD_PA-062414-480

Report Serial No.: 2014-1341

Sample ID: KW_FNE-G-062514-1
Sample Date: 6/25/2014
Customer Sample ID: King William TP - Final Effluent
Sample ID: 269050
Sample Sub-Type: SAMP

Analyte	Method	Unit	Result	Flag	LOQ	Analyst	Analysis Date	Analysis Time
Chlorobenzene	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Chlorodibromomethane	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Chloroform	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Ethylbenzene	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Methylene Chloride	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Tetrachloroethene	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Toluene	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
trans-1,2-Dichloroethene	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Trichloroethylene	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21
Vinyl Chloride	EPA 624	ug/l	<10.0		10.0	SLOPEZ	06/26/14	17:21

Notes

LOQ is lowest concentration at which quantitation is demonstrated.
**Analyte is not included in the HRSD CEL VELAP scope of accreditation*

Authorized By: Li Zhang - Lab Manager

Date Authorized: 7/18/2014

CENTRAL ENVIRONMENTAL
LABORATORY
ANALYTICAL REPORT
VA Laboratory ID 460011

HRSD

Job ID: HRSD_PA-071014-557

Report Serial No.: 2014-1362

Sample ID: KW_FNE-C-071014-1
Sample Date: 7/10/2014
Customer Sample ID: King William TP - Final Effluent
Sample ID: 274600
Sample Sub-Type: SAMP

Analyte	Method	Unit	Result	Flag	LOQ	Analyst	Analysis Date	Analysis Time
CBOD	SM5210B-2011	mg/l	<2		2	MGRIBB	07/11/14	09:22
Chloride	SM4500Cl-B 2011	mg/l	87		5	DRAIFO	07/25/14	08:17
Aldrin	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
Alpha-BHC	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
Beta-BHC	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
Chlordane	EPA 608	ug/l	ND		0.20	MBOGGIO	07/17/14	14:09
DDD	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
DDE	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
DDT	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
Dieldrin	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
Endosulfan I	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
Endosulfan II	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
Endosulfan Sulfate	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/24/14	15:52
Endrin	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
Endrin Aldehyde	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
Gamma-BHC	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
Heptachlor	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
Heptachlor Epoxide	EPA 608	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15

Notes

LOQ is lowest concentration at which quantitation is demonstrated.
**Analyte is not included in the HRSD CEL VELAP scope of accreditation*

CENTRAL ENVIRONMENTAL
LABORATORY
ANALYTICAL REPORT
VA Laboratory ID 460011

HRSD

Job ID: HRSD_PA-071014-557

Report Serial No.: 2014-1362

Sample ID: KW_FNE-C-071014-1
Sample Date: 7/10/2014
Customer Sample ID: King William TP - Final Effluent
Sample ID: 274600
Sample Sub-Type: SAMP

Analyte	Method	Unit	Result	Flag	LOQ	Analyst	Analysis Date	Analysis Time
Total Arochlors	EPA 608	ug/l	ND		7.00	MBOGGIO	07/17/14	14:09
Toxaphene	EPA 608	ug/l	ND		0.50	MBOGGIO	07/17/14	14:09
Chlorphyriphos	EPA 622	ug/l	<0.100		0.100	MBOGGIO	07/16/14	13:11
Demeton, Total	EPA 622	ug/l	<0.100		0.100	MBOGGIO	07/16/14	13:11
Diazinon	EPA 622	ug/l	<0.100		0.100	MBOGGIO	07/16/14	13:11
Guthion	EPA 622	ug/l	<0.100		0.100	MBOGGIO	07/16/14	13:11
Kepone	EPA 8081B	ug/l	<0.20		0.20	MBOGGIO	07/23/14	19:32
Methoxychlor	EPA 8081B	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
Mirex	EPA 8081B	ug/l	<0.05		0.05	MBOGGIO	07/16/14	20:15
Hardness, Total	SM 2340B 20th Ed.	mg eq CaCO3/l	52.1		1.16	SLABOCKI	07/15/14	11:32
Mercury, Dissolved	EPA 245.1	ug/l	<0.10		0.10	KWILLI	07/22/14	12:35
Antimony, Dissolved	EPA 200.8, Rev. 5.4	ug/l	<1.00		1.00	KWILLI	07/16/14	11:35
Arsenic, Dissolved	EPA 200.8, Rev. 5.4	ug/l	<1.00		1.00	KWILLI	07/17/14	13:54
Cadmium, Dissolved	EPA 200.8, Rev. 5.4	ug/l	0.14		0.05	KWILLI	07/16/14	11:35
Chromium, Dissolved	EPA 200.8, Rev. 5.4	ug/l	<1.00		1.00	KWILLI	07/17/14	13:54
Chromium, Total	EPA 200.8, Rev. 5.4	ug/l	<1.00		1.00	KWILLI	07/16/14	12:51
Copper, Dissolved	EPA 200.8, Rev. 5.4	ug/l	0.95		0.50	KWILLI	07/17/14	13:54
Lead, Dissolved	EPA 200.8, Rev. 5.4	ug/l	1.71		0.10	KWILLI	07/17/14	10:00

Notes

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*Analyte is not included in the HRSD CEL VELAP scope of accreditation

Job ID: HRSD_PA-071014-557

Report Serial No.: 2014-1362

Sample ID: KW_FNE-C-071014-1
Sample Date: 7/10/2014
Customer Sample ID: King William TP - Final Effluent
Sample ID: 274600
Sample Sub-Type: SAMP

Analyte	Method	Unit	Result	Flag	LOQ	Analyst	Analysis Date	Analysis Time
Nickel, Dissolved	EPA 200.8, Rev. 5.4	ug/l	4.12		0.50	KWILLI	07/17/14	13:54
Selenium, Total	EPA 200.8, Rev. 5.4	ug/l	<0.50		0.50	KWILLI	07/16/14	12:51
Silver, Dissolved	EPA 200.8, Rev. 5.4	ug/l	<0.10		0.10	KWILLI	07/16/14	11:35
Thallium, Dissolved	EPA 200.8, Rev. 5.4	ug/l	<0.10		0.10	KWILLI	07/17/14	10:37
Zinc, Dissolved	EPA 200.8, Rev. 5.4	ug/l	137		1.00	KWILLI	07/16/14	11:35
Ammonia-N, Distilled	Lachat 10-107-06-1-C	mg/l	<0.20		0.20	KSMITH	07/18/14	11:10
Nitrite/Nitrate - N	Lachat 10-107-04-1-A	mg/l	0.20		0.20	VFLAGG	07/15/14	11:58
Sulfide	ASTM D4658-08	mg/l	<0.11		0.11	RMORGAN	07/16/14	11:28
Nonylphenol	ASTM D7065-06	ug/l	<10.0		10.0	IGERASIMOV	07/21/14	14:57
1,2,4-Trichlorobenzene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
1,2-Diphenylhydrazine	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
1,2-Diphenylhydrazine is converted to Azobenzene in the extraction process.								
2,4,6-Trichlorophenol	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
2,4-Dichlorophenol	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
2,4-Dimethylphenol	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
2,4-Dinitrophenol	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
2,4-DNT	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
2-Chloronaphthalene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30

Notes

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CENTRAL ENVIRONMENTAL LABORATORY ANALYTICAL REPORT

VA Laboratory ID 460011

Job ID: HRSD_PA-071014-557

Report Serial No.: 2014-1362

Sample ID: KW_FNE-C-071014-1
Sample Date: 7/10/2014
Customer Sample ID: King William TP - Final Effluent
Sample ID: 274600
Sample Sub-Type: SAMP

Analyte	Method	Unit	Result	Flag	LOQ	Analyst	Analysis Date	Analysis Time
3,3-Dichlorobenzidine	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
4,6-Dinitro-o-Cresol	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Acenaphthene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Anthracene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Benzidine	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	13:39
Benzo(a) anthracene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Benzo(a) pyrene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Benzo(b) fluoranthene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Benzo(k) fluoranthene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Bis(2-chloroethyl) ether	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Bis(2-chloroisopropyl) ether	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Butylbenzylphthalate	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Chrysene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Di(2-ethylhexyl)phthalate	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Dibenzo (ah) anthracene	EPA 625	ug/l	<20.0		20.0	IGERASIMOV	07/18/14	07:30
Diethyl phthalate	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Dimethyl phthalate	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Di-n-butyl phthalate	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30

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CENTRAL ENVIRONMENTAL
LABORATORY
ANALYTICAL REPORT
VA Laboratory ID 460011

HRSD

Job ID: HRSD_PA-071014-557

Report Serial No.: 2014-1362

Sample ID: KW_FNE-C-071014-1
Sample Date: 7/10/2014
Customer Sample ID: King William TP - Final Effluent
Sample ID: 274600
Sample Sub-Type: SAMP

Analyte	Method	Unit	Result	Flag	LOQ	Analyst	Analysis Date	Analysis Time
Fluoranthene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Fluorene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Hexachlorobenzene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Hexachlorobutadiene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Hexachlorocyclopentadiene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Hexachloroethane	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Indeno (1,2,3-cd) pyrene	EPA 625	ug/l	<20.0		20.0	IGERASIMOV	07/18/14	07:30
Isophorone	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Nitrobenzene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
n-Nitrosodimethylamine	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
n-Nitrosodi-n-Propylamine	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
n-Nitrosodiphenylamine	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
n-Nitrosodiphenylamine is converted to Diphenylamine in the injection port.								
o-Chlorophenol	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/17/14	18:11
Pentachlorophenol	EPA 625	ug/l	<20.0		20.0	IGERASIMOV	07/18/14	07:30
Phenol	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Pyrene	EPA 625	ug/l	<10.0		10.0	IGERASIMOV	07/18/14	07:30
Total Dissolved Solids	SM 2540C, 2011	mg/l	519		1.0	JTONG	07/11/14	13:30

Notes

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CENTRAL ENVIRONMENTAL LABORATORY ANALYTICAL REPORT

VA Laboratory ID 460011

HRSD

Job ID: HRSD_PA-071014-557

Report Serial No.: 2014-1362

Sample ID: KW_FNE-C-071014-1
Sample Date: 7/10/2014
Customer Sample ID: King William TP - Final Effluent
Sample ID: 274600
Sample Sub-Type: SAMP

Analyte	Method	Unit	Result	Flag	LOQ	Analyst	Analysis Date	Analysis Time
TKN	Lachat 10-107-06-2-I	mg/l	1.19		0.50	GBROWN	07/14/14	09:41
Total Phosphorus	Lachat 10-115-01-1-E	mg/l	0.09		0.02	VFLAGG	07/17/14	08:07
TSS	SM 2540D&E, 2011	mg/l	<1.0		1.0	JTONG	07/11/14	10:09

Notes

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Authorized By: Li Zhang - Lab Manager

Date Authorized: 7/25/2014

REPORT OF ANALYSIS

CLIENT: Hampton Roads Sanitation District
ATTN: Kathy Hobson
ADDRESS: P. O. Box 5911
Virginia Beach, VA 23455
PHONE: (757) 460-4203
FAX: Don't Fax, Just Mail
Special Notes:

SAMPLE COLLECTED BY: CLIENT
GRAB COLLECTION:
Date: 7/10/2014 Time: 1110
COMPOSITE COLLECTION:
Start Date: Time:
End Date: Time:
PICK UP BY: CLIENT
SAMPLE RECEIPT:
Date: 7/11/2014 Time: 1415
NUMBER OF CONTAINERS: 3
SAMPLE CONDITION: ☑ Good ☐ Other (See C-O-C)
REPORT NO: 14-10473 11:53

SAMPLE ID: KW PA FNE
SAMPLE NO: 14-10473

Parameter	Method Number	JRA QL	Result	Unit	Analyst	Date	Time
Parathion	614	1	< 1	ug/L	JFS	07/21/14	2219
Malathion	614	1	< 1	ug/L	JFS	07/21/14	2219

NOTES:

JRA Quantification Level is the concentration of the lowest calibration standard above zero with a reliable signal.

The results on this report relate only to the sample(s) provided for analysis.

Results conform to NELAC standards, where applicable, unless otherwise indicated.

Authorized By: Elaine Claiborne

Elaine Claiborne, Laboratory Director

Date: 23-Jul-14

James R. Reed & Associates
770 Pilot House Drive, Newport News, VA 23606
(757) 873-4703 ● Fax: (757) 873-1498

VELAP# 460013
EPA# VA00015

ANALYTICAL DATA REPORT

UL ORDER ID 1407184

UL Sample Number 1407184-001

Grab Date/Time: 07/10/2014 11:10:00
Composite Start: N/A
Composite Stop: N/A
Collected By: Client

Sample Site: KW_PA FNE
Client Sample ID: KW_PA FNE
Sample Matrix: Wastewater

Parameter	Test Result	Units	RL	Analysis Date/Time	Analyst	Comment
GC/FPD						
TBT Tributyltin	**<0.03**	ug/L	0.03	07/21/2014 12:54:00	BD	

Comments for 1407184-001
No comments

Name of SIU	Location (Latitude & Longitude) of SIU	Distance Between SIU and Satellite Reclamation System*

* Distance along the length of the sewage collection system line or lines.

d. Provide concentrations of the following parameters for sewage or municipal wastewater to be diverted from the sewage collection system to the satellite reclamation system at the point of diversion. Analyses for other parameters may be provided, if available. Analyses of the sewage or municipal wastewater for pollutants of concern believed to be discharged by the SIUs identified in C.4.c may also be required. (See addendum instructions)

BOD_5 (mg/l) _____

TSS (mg/l) _____

Other (if available or required for SIU discharges):

_____

5. Information regarding the reclamation system or satellite reclamation system to be permitted.

a. Indicate if the system will reclaim industrial wastewater as follows: (See addendum instructions)

- ☐ At an industrial facility for reuse exclusively on the property of the industrial facility. Complete C.5.b.
- ☐ At an industrial facility for reuse on and off, or exclusively off the property of the industrial facility
- ☒ As part of a mixture with sewage or municipal wastewater where the industrial wastewater composes less than or equal to 90 % of the mixture
- ☐ As part of a mixture with sewage or municipal wastewater where the industrial wastewater composes greater than 90 % of the mixture

b. For reuse of reclaimed industrial wastewater on exclusively the property of the industrial facility where the reclaimed water is produced, check all that apply:

- ☐ The reclaimed industrial wastewater for reuse does not contain or is not expected to contain pathogens or other constituents in sufficient quantities and with a potential for human contact that may be harmful to human health.
- ☐ Reuse of the reclaimed industrial wastewater involves a closed or isolated system that prevents worker contact with reclaimed water of the system.
- ☐ Other measures are in place including but not limited to, applicable federal and state occupational safety and health standards and requirements to adequately inform and protect employees from pathogens or other constituents that may be harmful to human health in the reclaimed industrial water to be reused at the industrial facility.

If none of the above in C.5.b. apply, complete the remainder of the addendum. If any of the above in C.5.b. apply, the reuse is excluded from the requirements of the Water Reclamation and Reuse Regulation. For any other water reclamation and reuse projects or portions of projects described in the addendum that do not qualify for this exclusion, complete remaining applicable sections of the addendum. (See addendum instructions)

c. Identify the quality of reclaimed water to be produced relative to the planned reuse or reuses of the reclaimed water: (See addendum instructions)

- ☒ Level 1
- ☐ Level 2
- ☐ Level 1 and Level 2
- ☐ Industrial (applicable to reclamation of industrial wastewater)
- ☐ Unknown (applicable to unlisted reuses)

d. List any other physical, chemical, and biological characteristics and constituent concentrations that may affect the intended reuse of the reclaimed water with respect to adverse impacts to public health or the environment. (See addendum instructions)

Effluent has no known constituents that may adversely affect public health or the environment.

e. Indicate the designated design capacity of the reclamation system or satellite reclamation system. (See addendum instructions)

0.10 MGD

6. For each proposed reuse of reclaimed water (reclaimed from municipal or industrial wastewater) that is not listed in 9VAC25-740-90 A of the Water Reclamation and Reuse Regulation or for each reuse of reclaimed industrial wastewater that is listed in 9VAC25-740-90 A, provide the following information.

a. Describe the proposed reuse.

Level 1 reclaimed water will be piped to the Nestle Purina Facility where it will be used in the production of cat litter. The manufacturing process involves mixing clay seed with water in pin mixers under a proprietary process.

b. Describe any known risks of the proposed reuse to public health.

There are no known risks to public health. According to the Nestle Purina Water Conservation and Management Plan, the industrial process effectively consumes the water with a small residual released as steam.

c. Describe the degree of public access and human exposure, including worker contact, to reclaimed water that is or will be caused by the proposed reuse.

The Nestle Purina facility is fenced in to prevent public access to the site. The reclaimed water is transported directly via a dedicated pipe to an enclosed tank system which then distributes the water to the pin mixers.

d. Indicate the reclaimed water treatment necessary to prevent nuisance conditions by the proposed reuse.

Level 1

e. Describe the potential for improper or unintended use of reclaimed water resulting from the proposed reuse. (See addendum instructions)

Under the written agreement signed by both HRSD and Nestle Purina, the reclaimed water will be used only for specific non-potable water uses allowed under state regulations. The reclaimed water will be tranferred via pipe from the HRSD King William STP directly to the property of Nestle Purina. The potential for improper or unintended use of the reclaimed water is minimal as the Nestle Purina Water Conservation and Management Plan states that no shower, toilets, sinks, or outdoor faucets are connected to this water system. The water distribution system is dedicated to the fines conglomeration process used in the manufacture of cat litter. The moisture content of the wet clay seed in the pin mixers is monitored to control the amount of water used.

f. For new indirect potable reuse proposals, provide the following information:

(1) Name of the surface water to receive the reclamation system discharge and from which water will be withdrawn for potable water supply: (See addendum instructions)

_____

(2) Receiving water body type:

☐ Lake or pond
☐ River or stream

(3) Name of water treatment facility that will withdraw water for potable water supply: _____

(4) Attach a map that shows the location of both the discharge from the reclamation system and the intake of the water treatment facility.

(5) Approximate the shortest distance by way of the surface water named in C.6.f (1) above, between the discharge of the reclamation system and the intake of the water treatment facility: _____(feet)

(6) Approximate the residence or transport time between the discharge of the reclamation system and the intake of the water treatment facility: _____

(7) Approximate the mixing ratio of reclaimed water to ambient water at the intake of the water treatment facility: _____

D. Reclaimed water management (RWM) plan

1. For a reclamation system, satellite reclamation system or reclaimed water distribution system that provides or will provide reclaimed water directly to an end user or end users, including an end user that is also the applicant or permittee, submit a Reclaimed Water Management (RWM) plan to contain the following information. (See addendum instructions)

a. A description and map of the expected service area to be covered by the RWM plan for the term of the permit for the project.

b. A current inventory of impoundments, ponds or tanks within the service area under D.1.a of the addendum, used for:

(1) System storage of reclaimed water and, as applicable, reject water storage that are under the control of the applicant or permittee; and

(2) Non-system storage of reclaimed water.

c. A water balance that accounts for the volumes of reclaimed water to be generated, stored, reused and discharged.

d. An example of service agreements or contracts to be established by the applicant or permittee with end users regarding implementation of and compliance with the RWM plan.

e. A description of monitoring of end users by the applicant or permittee to verify compliance with the terms of their agreements or contracts. Monitoring must include, at a minimum, metering the volume of reclaimed water consumed by end users.

f. An education and notification program.

g. A cross-connection and backflow prevention program.

h. A description of how the quality of reclaimed water in the reclaimed water distribution system will be maintained to meet standards for the intended reuse(s) of that reclaimed water.

2. Supplemental irrigation rates, nutrient management plans (NMPs) and site plans for irrigation reuse of reclaimed water.

D. Reclaimed Water Management Plan (RWM)

The water reclamation system will transport reclaimed water from King William STP at 542 Acquinton Church Road to the Nestle Purina Cat Litter Facility on Tidy Cat Lane. The pipeline will be placed underground in the easement along Acquinton Church Road and Dunluce Road. The pipe will extend to the fence line of the Nestle Purina Cat Litter Facility. During this permit term, it is anticipated that the only end user of the reclaimed water will be Nestle Purina Cat Litter Facility. A map is attached showing path of the pipeline.

The King William STP has a VPDES permit (VA0088102) which authorizes discharge into Moncuin Creek. The King William STP will discharge any reject water via the permitted outfall 001 as long as it meets the limits of the VPDES permit. Any reclaimed water not transported to the Nestle Purina Cat Litter Facility will also be discharged through outfall 001. Consequently, the service area of the RWM Plan does not include storage facilities.

King William STP is permitted for a capacity of 0.10 MGD. The average daily flow for calendar year 2014 was 0.035 MGD. It is anticipated that all of the HRSD-King William final effluent will be pumped to the Nestle Purina Cat Litter Facility unless it does not meet Level 1 criteria or if the Nestle Purina Cat Litter Facility has suspended operation. If the effluent is not being sent to Nestle Purina, then it will be discharged via outfall 001 permitted under the HRSD King William VPDES permit VA0088102. Based on past King William plant performance, it is likely to meet Level 1 water quality limits the majority of the time. Upon receiving results of a Level 1 limit exceedance, the reclaimed water that does not meet Level 1 requirements will immediately be returned to the headworks of the HRSD King William WWTP. Nestle will connect hoses to the tank and run the hoses to the nearest sanitary drain or manhole. The tank pumps will be used to pump down the tank. Flow will follow the sanitary drain / manhole and return to the King William STP.

The Nestle Purina Cat Litter Facility operates six days per week and has a period of 4-5 days of plant shutdown to accommodate annual maintenance measures. Based on current plant average flow of 0.035 MGD and a conservative estimate of 96 hours per month, King William STP would discharge 140,000 gallons each month into Moncuin Creek.

A copy of the service agreement between Nestle Purina and HRSD is attached.

HRSD will install a meter which will record the amount of reclaimed water that will be provided to Nestle Purina each day. Nestle Purina has a Groundwater Withdrawal Permit (GW0003501) issued by the Department of Environmental Quality. The reclaimed water from the King William STP will be used to supplement the groundwater used in the industrial process. This purpose of this water reclamation project is to reduce the amount of groundwater utilized by Nestle Purina. Groundwater Withdrawal

Permit (GW0003501) contains conditions which ensure the groundwater is used appropriately. Compliance with the conditions of the groundwater permit will satisfy the requirements of the service agreement. Nestle Purina is currently permitted for groundwater withdrawal to meet all water demands independent of reclaimed water from HRSD.

Although the King William STP will produce Level 1 reclaimed water, Level 1 water is not required for the proposed use of the water by Nestle Purina. The reclaimed water will be used to mix clay seed in pin mixers. The water will be consumed in the process with a small amount being released as steam. Nestle Purina utilizes a closed-loop system throughout this process, and mixers do not contain product during periods of plant inactivity and maintenance. During shutdowns, water will remain in the piping and is not accessible to employees. If there is a need to service piping containing reuse water, air pressure will be used to blow the water back into the tank. Therefore, plant employees will not be in contact with the water during process. See pages 3-4 of this document for Education and Notification Program details.

The pipe for both transporting the reclaimed water from the King William STP and distributing the water within the Nestle Purina facility is a dedicated pipeline. Nestle has installed back flow prevention and a weep hole at the top of the dip tube to prevent syphoning. There is no potential for cross-connection of the reclaimed water distribution system to a potable water system.

The King William Wastewater Treatment Plant is an MBR plant utilizing a 0.1 micron filter. This membrane filtration ensures that particulate solids will not be in the effluent/reclaimed water line, thus eliminating the need for flushing the pipeline to clear solids. However, if flushing the line is required as part of a maintenance routine or to eliminate an unforeseen clog, flow rates can be manually increased at any time. Plastic pipe has been installed to prevent corrosion of the distribution system. A broken pipe line will be indicated by a low pressure alarm, while pump failures are indicated by pump fail temperature alarms. Distribution system maintenance will also include exercising valves and maintaining air release valves to ensure continued and proper operation.

The reclaimed water will be monitored at the frequency required by the VPDES permit and Water Reclamation Regulations to ensure compliance with the standards. The point of compliance will be located at the Effluent Reuse Pump Station. As noted above, HRSD will provide only a portion of the amount of water needed for a day's production at the Nestle Purina facility. King William STP will discharge via the VPDES permitted outfall on days that the Nestle Purina facility is not in operation. Since the water will be used on a daily basis either by Nestle Purina or discharged via the VPDES permitted outfall, there is no concern for degradation of the water due to storage.

King William Treatment Plant Effluent Utilization and Furnishing of Reclaimed Water to Nestle Purina

Education and Notification (E&N) Program

Level 1 Reclaimed Water will be conveyed; therefore an E & N program is required according to the Virginia Reclamation and Reuse Regulation 9VAC25-740-170.

Education

- HRSD will provide an annual presentation at the end of each calendar year that will summarize the data and experiences for that year. This presentation will also review the Virginia Reclamation and Reuse Regulation and the prohibitions and precautions relevant to this use of reclaimed water. This presentation will include selected personnel from both HRSD and Nestle Purina who are directly involved in the King William Treatment Plant Effluent Utilization and Furnishing of Reclaimed Water to Nestle Purina. This annual presentation will satisfy the formal training requirement of the E&N program.
- HRSD will facilitate a quarterly conference call with Nestle Purina to review data and related topics concerning HRSD furnishing reclaimed water to Nestle Purina. These quarterly meetings via conference call will satisfy the meeting requirement of the E&N program.
- Nestle will post advisory signs or placards where appropriate according to the Virginia Reclamation and Reuse Regulation 9VAC25-740-160. Advisory signs or placards shall be posted within and at the boundaries of reuse areas. Each sign shall state, at a minimum, "CAUTION: RECLAIMED WATER – DO NOT DRINK" and have the equivalent standard international symbol for nonpotable water. The size of the sign and lettering used shall be such that it can be easily read by a person with normal vision at a distance of 50 feet.

Notification

A. Notifications required for discharge of substandard reclaimed water to reuse.

HRSD will be notified of noncompliant results instantaneously for total residual chlorine, pH, and turbidity by utilizing monitoring instrumentation. HRSD will be notified of noncompliant results for bacteria and BOD_5 upon completion of standard methods of laboratory analysis.

- Reclaimed water will be diverted to the HRSD VPDES outfall upon notification of noncompliance.

Nestle Purina will be notified of all diversions to the outfall via email within 24 hours.

HRSD will follow the notification requirements established in the Virginia Reclamation and Reuse Regulation: *"For reuses other than IPR. Where treatment of the reclaimed water fails more than once during a seven-day period to comply with Level 1 disinfection or other standards developed in accordance with 9VAC25-740-70 D or 9VAC25-740-70 E for the protection of human health, and the noncompliant reclaimed water has been discharged to a reclaimed water distribution system or directly to a reuse, the permittee shall notify the end user of the treatment failures and advise the end user of precautions to be taken to protect human health when using the reclaimed water in areas accessible to the public or where human contact with the reclaimed water is likely. These precautions shall be implemented for a period of seven days or greater depending on the frequency and magnitude of the treatment failure."*

B. Notifications required for loss of service.

Nestle Purina will be notified of all "loss of service" events via email:

within 24 hours for a planned event,

and within 8 hours from discovery for an unplanned event.

HRSD will follow the notification requirements established in the Virginia Reclamation and Reuse Regulation: *"For reuses other than IPR. Where reclaimed water service to end users will be interrupted due to planned causes, such as scheduled maintenance or repairs, the permittee shall provide advance notice to end users of the anticipated date and duration of the interrupted service. Where reclaimed water service to end users is disrupted by unplanned causes, such as an upset at the reclamation system, the permittee shall notify end users and the affected public of the disrupted service if it cannot or will not be restored within eight hours of discovery."*

AGREEMENT FOR CONSTRUCTION OF THE KING WILLIAM TREATMENT PLANT EFFLUENT UTILIZATION AND FURNISHING OF RECLAIMED WATER TO NESTLE PURINA

THIS AGREEMENT, between the **HAMPTON ROADS SANITATION DISTRICT** ("HRSD"), a political subdivision of the Commonwealth of Virginia, whose principal place of business is at 1434 Air Rail Avenue, Virginia Beach, Virginia, 23455, and **NESTLE PURINA PETCARE COMPANY** ("CONSUMER"), a Missouri Corporation having its principal offices at Checkerboard Square, St. Louis, Missouri and , having a manufacturing facility located at 131 Tidy Cat Road, King William, Virginia 23086, is entered into this 5 day of December, 2014.

WITNESSETH:

WHEREAS, HRSD is the owner of a wastewater treatment plant located near CONSUMER which produces reclaimed water which can be used to supplement the water needs of CONSUMER, and HRSD desires to supply such water to CONSUMER; and

WHEREAS, HRSD desires to provide a beneficial use for the treated water from the King William Treatment Plant; and

WHEREAS, CONSUMER desires to obtain reclaimed water for use at its King William Manufacturing Plant and the reclaimed water available from HRSD is of sufficient quality for utilization by CONSUMER; and

WHEREAS, HRSD shall construct the Reclaimed Water Supply Facilities needed to deliver reclaimed water to the property line of CONSUMER's King William Manufacturing Plant; and

WHEREAS, CONSUMER shall construct the End User Facilities needed to make use of the supplied reclaimed water;

IN CONSIDERATION of the foregoing and the mutual covenants and promises set forth below, and in consideration of other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged;

NOW, THEREFORE, it is mutually agreed between the parties hereto as follows:

I. DESCRIPTION OF FACILITIES AND TERMS

A. "Reclaimed Water" shall mean water meeting Level 1 standards according to the Virginia Water Reclamation and Reuse Regulations: 9 VAC 25-740-10 *et seq.*

B. "Treatment Plant" shall mean HRSD's King William Treatment Plant located at 542 Acquinton Church Road, King William, Virginia, 23086.

C. "Manufacturing Plant" shall mean Nestle Purina's King William Facility located at 131 Tidy Cat Road, King William, Virginia 23086.

D. "Point of Delivery" shall mean the property line at Nestle Purina's Manufacturing Plant.

E. "Reclaimed Water Supply Facilities" or "HRSD Facilities" shall mean all facilities necessary for furnishing Reclaimed Water and service under this Agreement to the Point of Delivery specified in this Agreement, including but not limited to a pipeline, pumping system, and monitoring system.

F. "End User Facilities" or "CONSUMER Facilities" shall mean all facilities necessary for the Manufacturing Plant to receive Reclaimed Water and service under this Agreement from the Point of Delivery specified in this Agreement, including but not limited to storage, pipeline distribution system, and monitoring system.

II. CONSTRUCTION OF HRSD AND CONSUMER FACILITIES

A. Cost of Construction:

1. HRSD agrees to furnish and install the HRSD Facilities at no cost to the CONSUMER. Cost shall include construction, contract administration, construction inspections, and any related miscellaneous expense, such as Amendments or Change Orders related to the design and construction of the HRSD Facilities. These costs shall hereinafter be collectively referred to as the "HRSD Facilities Costs."

2. CONSUMER agrees to furnish and install the CONSUMER Facilities at CONSUMER's cost. Cost shall include construction, contract administration, construction inspections, and any related miscellaneous expense, such as Amendments or Change Orders related to the design and construction of the CONSUMER Facilities. These costs shall hereinafter be collectively referred to as the "CONSUMER Facilities Costs."

B. Approval of Plans and Specifications:

HRSD and the CONSUMER agree that before any construction work is begun under this Agreement, the CONSUMER shall:

1. Coordinate the CONSUMER Facilities design with the HRSD Facilities design.

2. Submit to and secure approval from HRSD (in writing) of the final Plans and Specifications for the CONSUMER Facilities.

3. Any change to the final plans and specifications shall be approved by HRSD and CONSUMER.

C. Ownership, Operation and Maintenance of the HRSD and CONSUMER Facilities

1. HRSD shall own and be responsible for operation, repair, and maintenance of the HRSD Facilities.

2. CONSUMER shall own and be responsible for construction, operation, repair, and maintenance of the CONSUMER Facilities.

D. Schedule for the Project

Design for the CONSUMER Facilities began in July 2014. with construction anticipated to be completed by approximately December 2014. If the project dates aforementioned are deviated from substantially, HRSD reserves the right to terminate the Agreement.

E. No Private Use

The parties mutually acknowledge that this Agreement is not intended to establish the right to private use of Reclaimed Water by CONSUMER and, as a result, the availability of Reclaimed Water is not an obligation of HRSD hereunder. HRSD shall provide Reclaimed Water, if available, in accordance with the terms of this Agreement, but it does not have the obligation to provide Reclaimed Water since such obligation may result in private use.

III. OBLIGATIONS OF HRSD

A. Design

HRSD agrees to provide all design related services for HRSD Facilities at no cost to the CONSUMER.

B. Land Acquisition

HRSD agrees to procure any easements or land acquisition needed for the HRSD Facilities at no cost to the CONSUMER.

C. Permits

HRSD agrees to apply, receive and maintain all necessary permits to construct and operate the HRSD Facilities.

D. Construction

HRSD agrees to furnish and install the HRSD Facilities at no cost to the CONSUMER.

E. Inspection and Construction Administration

HRSD agrees to provide:

1. Full-time inspection by HRSD of the construction of HRSD Facilities. The inspector(s) shall have the full authority to insure the HRSD Facilities work is constructed in accordance with the approved plans and specifications.

2. HRSD or its consultant, at no cost to the CONSUMER, shall be responsible for construction inspection and administration of the HRSD Facilities.

3. Construction Administration and inspection for work done for HRSD Facilities shall be performed and paid for by HRSD. Construction Administration and inspection for the work done for the CONSUMER Facilities shall be performed and paid for by the CONSUMER. Each party shall have prepared their own record drawings at no cost to the other.

F. Provision of Reclaimed Water

1. Subject to the terms, conditions, and limitations set forth in this Agreement, HRSD shall deliver to CONSUMER, and CONSUMER shall receive from HRSD, the Reclaimed Water desired by CONSUMER for CONSUMER's use at the Manufacturing Plant.

2. Reclaimed Water shall be available at the Point of Delivery to CONSUMER within 12 months of CONSUMER completing construction of the CONSUMER Facilities. If Reclaimed Water is not available within 12 months of when the CONSUMER completes construction, then a mutually acceptable date will be agreed upon by the parties.

3. Notwithstanding the provisions of Section III(F)(2) above, if the HRSD Facilities are not available to supply Reclaimed Water to the Point of Delivery within 24 months of the CONSUMER completing construction of the CONSUMER Facilities, then HRSD shall reimburse the CONSUMER for actual capital costs directly associated with the CONSUMER Facilities up to a maximum of $2,000,000.

4. The quality of water delivered by HRSD to CONSUMER under the terms of this Agreement shall meet the Level 1 standards as referenced in Section I.A. of this Agreement. HRSD shall provide to CONSUMER water quality monitoring data at the regulatory "point of compliance" located on the Treatment Plant property before conveying the Reclaimed Water to CONSUMER. An instantaneous turbidity meter shall be

installed at Treatment Plant. If turbidity data triggers a corrective action threshold as defined 9 VAC 25-740, *et seq.*, then HRSD shall immediately stop supplying reclaimed water to the Point of Delivery until the water quality meets the Level 1 standards as referenced in Section I(A) . Notifications shall be sent to appropriate HRSD and CONSUMER personnel. If any of the other water quality monitoring data triggers a corrective action threshold as defined 9 VAC 25-740, *et seq.*, HRSD shall contact the CONSUMER within 24 hours of discovery. At that time, HRSD shall stop supplying reclaimed water to the Point of Delivery until the water quality meets the Level 1 standards as referenced in Section I(A). For any unused Reclaimed Water **not** meeting Level 1 standards that is held in the CONSUMER Facilities, HRSD shall allow CONSUMER to return any and all such water back to HRSD via the CONSUMER's sanitary wastewater system that is collected and treated by HRSD's Treatment Plant, provided that CONSUMER shall discharge any such unused water to the sanitary wastewater system at a rate no greater than fifty (50) gallons per minute, not to exceed 8,000 gallons within a 12-hour period. CONSUMER shall notify and coordinate with HRSD prior to discharging any reject water so as not to adversely impact sanitary sewer or Treatment Plant. No surcharges shall be applied to the CONSUMER for the return of the reclaimed water that does not meet the Level 1 standards.

5. HRSD is not required to provide Consumer water on an exclusive or preferential basis.

6. HRSD shall be responsible for the operation, repair, and maintenance of HRSD Facilities outside of the Point of Delivery.

7. HRSD has no obligation to ensure that the Treatment Plant is capable of providing Reclaimed Water. HRSD shall not be liable for any failure, interruption, or shortage of Reclaimed Water, or any loss or damage resulting therefrom, occasioned in whole or in part by any cause.

8. HRSD makes no guarantee as to the quantity of Reclaimed Water available or to be provided to CONSUMER.

9. HRSD will not be held liable for any product or process issues resulting from the use of Reclaimed Water (meeting the standards described in Section I(A) supplied by HRSD per this Agreement.

10. In cooperation with the CONSUMER, HRSD may present the reuse project at appropriate venues to include, but not be limited to, professional organizational meetings, public information seminars, local and regional news publications, environmentally

related festivals and displays, and in professional and scientific literature. HRSD shall provide CONSUMER with a copy of the presentation or publication at least thirty (30) days prior to its use, and CONSUMER has the right to review any presentation or publication of the reuse project prior to presentation or publication. If CONSUMER notifies HRSD of any confidential information contained in such presentation or publication, HRSD shall remove such confidential portion prior to use of the presentation or publication.

IV. OBLIGATIONS OF THE CONSUMER

A. Design

CONSUMER agrees to provide all design related services for the CONSUMER Facilities at CONSUMER's cost.

B. Permits

Consumer agrees to apply, receive and maintain all necessary permits to construct and operate the CONSUMER Facilities.

C. Construction and Operation of CONSUMER Facilities

CONSUMER shall be responsible for construction, operation, repair, and maintenance of internal distribution lines from the Point of Delivery (i.e. the CONSUMER Facilities).

D. Use of Reclaimed Water

1. Subject to the terms, conditions, and limitations set forth in this Agreement, HRSD is to deliver to CONSUMER, and CONSUMER shall receive from HRSD, Reclaimed Water for CONSUMER's use at the Manufacturing Plant. CONSUMER will make reasonable efforts to use the Reclaimed Water furnished under this Agreement.

2. CONSUMER shall connect to the HRSD reuse pipeline within 12 months of HRSD completing construction of the HRSD Facilities. HRSD shall provide CONSUMER with written or electronic notice of completion of such construction. If Reclaimed Water is not available within 12 months of when HRSD completes construction, then a mutually acceptable date will be agreed upon by the parties.

3. If Reclaimed Water is not used by the CONSUMER within 24 months of the construction completion, then the CONSUMER shall reimburse HRSD for actual capital costs directly associated with the HRSD Facilities up to a maximum of $2,000,000.

4. CONSUMER shall be responsible for the operation, repair and maintenance of the CONSUMER Facilities inside the Point of Delivery (i.e., on CONSUMER's property).

5. The CONSUMER shall be responsible for adherence to all regulatory requirements related to the permits or other special federal, state, or local regulatory bodies in connection with the construction of the CONSUMER Facilities and use of Reclaimed Water and to use the water only for specific non-potable water , uses defined by state regulations.

6. The CONSUMER shall not have any right or entitlement to compel HRSD to deliver reclaimed water of a quality higher than Level 1 Standards as referenced in Section I(A). of this Agreement. CONSUMER shall have the right to reject any water not meeting Level 1 Standards. Any water quality monitoring required or desired onsite at CONSUMER will be the responsibility of CONSUMER.

7. In cooperation with HRSD, the CONSUMER may present the reuse project at appropriate venues to include, but not be limited to, professional organizational meetings, public information seminars, local and regional news publications, environmentally related festivals and displays, and in professional and scientific literature. CONSUMER shall provide HRSD with a copy of the presentation or publication at least thirty (30) days prior to its use, and HRSD has the right to review any presentation or publication of the reuse project prior to presentation or publication. If HRSD notifies CONSUMER of any confidential information contained in such presentation or publication, CONSUMER shall remove such confidential portion prior to use of the presentation or publication.

8. In the event CONSUMER rejects water in accordance with the terms of this Agreement, CONSUMER shall discharge all such rejected water to the existing sanitary sewer at a rate no greater than fifty (50) gallons per minute, not to exceed 8,000 gallons within a 12-hour period. CONSUMER shall notify and coordinate with HRSD prior to discharging any reject water so as not to adversely impact sanitary sewer or Treatment Plant.

V. GOVERNING LAW

This Agreement shall be deemed to be a Virginia Contract and shall be governed as to all matters whether or invalidity, interpretations, obligations, performance or otherwise exclusively by the laws of the Commonwealth of Virginia, and all questions arising with respect thereto shall be determines in accordance with such laws.

VI. TERMINATION AND COST RECOVERY

A. Anything herein or elsewhere to the contrary notwithstanding, this Agreement and the obligations of the parties hereunder may be terminated by HRSD in accordance with Section II; by the CONSUMER or HRSD in the event that either party breaches or violates any material provision of this Agreement or fails to perform any material covenant or agreement to be performed by either party under the terms of this Agreement and such breach, violation or failure is not cured prior to the commencement of the reuse project; or by mutual agreement of the CONSUMER and HRSD.

B. Either party may terminate this Agreement upon thirty (30) days written notice to the other. Unless terminated pursuant to Section XVI Private Use hereof, the party that terminates the agreement before the expiration of five (5) service years shall pay the other party for the capital costs incurred from the construction of the reuse system (i.e., the cost of the HRSD Facilities in the case of a termination by CONSUMER and the cost of the CONSUMER Facilities in the case of a termination by HRSD), including but not limited to reuse facilities, storage, and pipelines. In no case shall such payment by either party exceed $2 million dollars ($2,000,000). If one party is in breach of any of the terms of this Agreement and timely notification of the breach has been transmitted and received by the other party, and the breach remains uncured sixty (60) days after the Agreement-breaching party receives a written notice of the existence of such breach from the other party, and it is determined that good faith efforts are not being made to resolve the breach, then the Agreement can be terminated thirty (30) days after written notice. In such an event, the Agreement-breaching party shall pay the other party for the capital costs incurred from the construction of the reuse system, including but not limited to reuse facilities, storage, and pipelines as described in this Section VI.

VII. INDEMNITY BY CONTRACTOR(S) AND INSURANCE

A. CONSUMER shall ensure that the Contractor(s) it retains to construct the CONSUMER Facilities agree to protect, save and keep CONSUMER harmless and indemnified against any liability, obligation, penalty or damage or charge imposed for any negligence or willful misconduct by said Contractor(s), their officers, employees, agents, subcontractors, independent contractors, licensees or concessionaires, or for any violation of any laws or ordinances occasioned by said Contractor(s), their officers, employees, agents, subcontractors, independent contractors, licensees or concessionaires.

HRSD shall ensure that the Contractor(s) it retains to construct the HRSD Facilities agree to protect, save and keep HRSD harmless and indemnified against any liability, obligation, penalty or damage or charge imposed for any negligence or willful misconduct by said Contractor(s), their officers, employees, agents, subcontractors,

independent contractors, licensees or concessionaires, or for any violation of any laws or ordinances occasioned by said Contractor(s), their officers, employees, agents, subcontractors, independent contractors, licensees or concessionaires.

B. HRSD is responsible for any damages that HRSD, its agents, employees, or invitees create.

C. CONSUMER is responsible for any damages that CONSUMER, its agents, employees, or invitees create.

D. Each party or their agents shall carry insurance coverage for Workmen's Compensation, Employers Liability, Commercial General Liability, Automobile Liability and Property Insurance at limits necessary to assure the successful construction of the facilities.

Upon request, a party shall furnish the other party with a certificate of insurance evidencing such coverages. Each party shall provide at least thirty (30) days advance notice to the other party of any cancellation or material change in insurance coverage.

VIII. NOTICE

Any notice, communication or request under this Agreement shall be provided in writing by either (a) certified mail, return receipt requested, postage prepaid, or (b) a nationally recognized overnight delivery service (next business day service), or (c) hand-delivery, if the receipt of the same is evidenced by the signature of the addressee or authorized agent, and addressed to the following:

HRSD:
Hampton Roads Sanitation District
Attention: Edward G. Henifin, P.E., General Manager
P.O. Box 5911
Virginia Beach, Virginia 23471-0911

With copy to:
Conway H. Sheild, III, Esq.
Jones, Blechman, Woltz & Kelly, P.C.
701 Town Center Drive, Suite 800
Newport News, Virginia 23606

CONSUMER :
Nestle Purina PetCare Company
Attention: Plant Manager
131 Tidy Cat Road
King William, VA 23086

With copy to:
Nestlé Purina PetCare Company
Attn: Vice President and General Counsel
One Checkerboard Square
St. Louis, MO 63164

IX. ASSIGNMENT

Without the prior written consent of HRSD, neither this Agreement, nor any interest in this Agreement, nor any claim arising under the terms of this Agreement shall be transferred or assigned by CONSUMER, except to a parent, subsidiary, or affiliate corporation of CONSUMER, or to a successor corporation or entity with which CONSUMER is consolidated or merged, or which acquired by conveyance, transfer, or condemnation all or substantially all of CONSUMER's water distribution system as contemplated under the terms of this Agreement. Without the prior written consent of CONSUMER, neither this Agreement, nor any interest in this Agreement, nor any claim arising under the terms of this Agreement shall be transferred or assigned by HRSD, except to a parent, subsidiary, or affiliate corporation of HRSD, or to a successor corporation or entity with which HRSD is consolidated or merged, or which acquired by conveyance, transfer, or condemnation all or substantially all of HRSD's Facilities as contemplated under the terms of this Agreement.

X. AMENDMENT

This Agreement may be amended only by a written instrument duly executed by both parties.

XI. SEVERABILITY

If any provision of this Agreement or the application thereof to any circumstance shall be determined to be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application thereof shall not be affected and shall continue to be valid, in effect and enforceable to the fullest extent permitted by law.

XII. DAMAGES

The CONSUMER hereby agrees to indemnify, defend, and hold harmless HRSD, its affiliates, and their respective employees, officers, and agents from any loss, claim, damage, liability, fine, penalty, injury or action (including reasonable attorney's fees and expenses) to extent arising from the negligent acts or omissions, willful misconduct or violation of applicable law, rule or regulation by the CONSUMER, its agents or employees.

To the extent permitted by law, and without HRSD waiving the possible defense of sovereign immunity, HRSD shall reimburse CONSUMER its affiliates, and their respective employees, officers, and agents for actual damages for any misfeasance, malfeasance, or nonfeasance caused by HRSD's actions under this Agreement.

In no event shall either party be liable to the other party for any indirect, incidental or consequential damages or for loss of profits or revenue, whether in an action in contract, tort, strict liability or otherwise, even if advised of the possibility of those damages.

XIII. FORCE MAJEURE

In the event of delay in the performance of such obligations due to unforeseeable causes beyond the reasonable control of the CONSUMER or HRSD or the Contractor(s) and without their fault or negligence, including, but not restricted to, acts of God, or of the public enemy, act of the government, fires, floods, epidemics, quarantine restrictions, strikes, freight embargos, and unusually severe weather or delays of subcontractors due to such causes; it being the purpose and intent of this provision that in the event of the occurrence of any such delay, the time or times for performance of the obligations of the parties shall be extended for the period of the delay.

XIV. WAIVER

No waiver of breach of any term or provision of this Agreement shall be construed to be, or shall constitute, a waiver of any other breach of this Agreement. No waiver shall be binding unless in writing and signed by the parties waiving the breach.

The failure of any party to seek redress for violation of or to insist upon the strict performance of any covenant or condition of this Agreement shall not prevent a subsequent act, which would have originally constituted a violation, from having the effect of an original violation.

The rights and remedies provided by this Agreement are cumulative and the use of any one right or remedy by any party shall not preclude or waive the right to use any or all other remedies. Such rights and remedies are given in addition to any other rights the parties may have by law, statute, ordinance or otherwise.

XV. INTEGRATION; COUNTERPARTS

This Agreement constitutes the entire understanding among the parties. No provision of this Agreement may be waived, modified or amended except by an instrument signed by the party against whom the enforcement of such waiver, modification or amendment is sought. No waiver by either party of any failure or refusal by the other party to comply with its obligations hereunder shall be deemed a waiver of any other or subsequent failure or refusal to comply. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. A facsimile copy of an executed counterpart or a copy scanned into a PDF format of an executed counterpart shall be valid and have the same force and effect as an original.

XVI. PRIVATE USE

CONSUMER acknowledges that there is HRSD tax-advantaged financing outstanding with regard to the Treatment Plant and that this Agreement is intended to be structured so as avoid private business use, as defined in Section 141 of the Internal Revenue Code of 1986, as amended, and U.S. Treasury Regulations issued thereunder. If HRSD or its bond counsel determine further

action is needed to avoid private business use with respect to assets financed on a tax-advantaged basis as a result of the water reuse system, the parties shall work together so as to modify the Agreement such that it shall not result in private business use and so as to achieve the purposes of the Agreement. Any such modification shall be subject to mutual agreement of the parties, both parties acting in good faith, as evidenced by an amendment executed by both parties. If private business use cannot be avoided or the parties cannot in good faith mutually agree to an amendment to this Agreement, HRSD may cancel the Agreement without any fee or penalty, including but not limited to any payments required by Section VI hereof.

XVII. TERM OF CONTRACT

The term of this contract shall commence on the date it is signed and executed and shall continue for an indefinite period of service unless earlier terminated as provided herein.

XVIII. INDEPENDENT CONTRACTOR

Each party shall at all times be an independent contractor and not an agent, partner, joint venture, or employee of the other party, and nothing contained herein shall be deemed as creating any employee/employer, partnership, or joint venture relationship between the parties. Neither party nor any of its personnel will have any authority to bind or commit the other party to any obligation or agreement, or act as the agent of the other party in any respect.

IN WITNESS WHEREOF, Nestle Purina PetCare Company (CONSUMER) has caused this Agreement to be signed by the V.P. Product Supply (title of signer) on its behalf pursuant to (approving action by Corporate) on December 5th, 2014, and the Hampton Roads Sanitation District Commission (HRSD) has caused this Agreement to be signed on its behalf by its General Manager in accordance with authorization granted at its regular meeting held on July 22, 2014.

NESTLÉ PURINA PETCARE COMPANY

By: Kirk Lawrence

Name: Kirk Lawrence

Title: VP Product Supply - Golden Products

HAMPTON ROADS SANITATION DISTRICT

By: _____

Edward G. Henifin, P.E.
General Manager

This is an Addendum to the Agreement for Construction of the King William Treatment Plant Effluent Utilization and Furnishing of Reclaimed Water to Nestle Purina that was signed on December 5, 2014.

Per the Virginia Department of Environmental Quality, the service agreement between HRSD and Nestle Purina must include the applicable prohibitions and requirements for the use of reclaimed water specified in the Virginia Reclamation and Reuse Regulation 9VAC25-740-50 B and 9VAC25-740-170.

The following uses of reclaimed water are prohibited per 9VAC25-740-50 B:

1. Direct potable reuse;

2. The reuse of reclaimed water distributed to one-family or two-family dwellings;

3. The reuse of reclaimed water to fill residential swimming pools, hot tubs or wading pools;

4. The reuse of reclaimed water for food preparation or incorporation as an ingredient into food or beverage for human consumption;

5. Bypass of untreated or partially treated wastewater from the reclamation system or any intermediate unit process to the point of reuse unless the bypass complies with standards and requirements specified in 9VAC25-740-70 and is for essential maintenance to assure efficient operation;

6. The return of reclaimed water to the reclaimed water distribution system after the reclaimed water has been delivered to an end user. *(If water is returned from Nestle Purina, it will be returned to HRSD via the sanitary sewer system)*; and

7. Reduction of the discharge from a VPDES permitted treatment works due to diversion of source water flow for reclamation and reuse such that the physical, chemical, or biological properties of the receiving state waters are affected in a manner that would cause a significant adverse impact to other beneficial uses.

The following use requirements for reclaimed water are stated in 9VAC25-740-170:

1. Reclaimed water shall be used in a manner that is consistent with the conditions of the VPDES or VPA permit, such that public health and the environment shall be protected.

2. Reclaimed water delivered to end users shall comply with reclaimed water standards required for the intended reuses at the point of delivery to end users.

3. There shall be no nuisance conditions resulting from the distribution, use, or storage of reclaimed water.

Nestle Purina Petcare Company

Signed: _____

Name: Kirk Lawrence

Title: VP Product Supply - Golden Products NPPC

Date: 12-4-15

Hampton Roads Sanitation District

Signed: _____

Edward G. Henifin, P.E.

General Manager

Date: 12/8/2015

a. Do the reuse categories identified within the service area under D.1.a of the addendum include irrigation reuses of reclaimed water as follows? (See addendum instructions)

☐ Bulk irrigation reuse.
☐ Non-bulk irrigation reuse.
☒ There will be no irrigation reuses. (Proceed to E.)

b. Will all irrigation with reclaimed water within the service area of the RWM plan be supplemental irrigation? (See addendum instructions)

☐ Yes. Explain how supplemental irrigation rates will be achieved for bulk and non-bulk irrigation reuse of reclaimed water.
☐ No. (Proceed to E.)

c. Indicate the concentration of total nitrogen (N) and total phosphorus (P) present or expected to be present in the reclaimed water for irrigation reuse:

☐ Annual average concentration of total N and total P greater than 8.0 mg/l and 1.0 mg/l, respectively (> Biological Nutrient Removal or BNR);

or

☐ Annual average concentration of total N and total P less than or equal to 8.0 mg/l and 1.0 mg/l, respectively (≤ BNR).

d. For each irrigation property listed under B.3.d of this addendum that is a bulk irrigation reuse site, submit the following with the RWM plan: (See addendum instructions)

(1) A nutrient management plan if:

(a) The reclaimed water applied to the irrigation reuse site is > BNR (see D.2.c above), or

(b) Independent of the reclaimed water nutrient content and in addition to irrigation reuse (i) there is no option to dispose of the reclaimed water through a VPDES permitted discharge, or (ii) there is an option to dispose of the reclaimed water through a VPDES permitted discharge, but the VPDES permit does not allow discharge of the full nutrient load under design flow. With the nutrient management plan, provide a copy of the letter from the Department of Conservation and Recreation, Division of Soil and Water Conservation approving the nutrient management plan.

(2) A site plan.

e. For all non-bulk irrigation reuse of reclaimed water that is > BNR (see D.2.c above) within the service area specified in D.1.a, including each irrigation property listed under B.3.d that is a non-bulk irrigation reuse site, describe measures that are or will be implemented to manage nutrient loads from the non-bulk irrigation reuse. Attach additional information as needed. (See addendum instructions)

E. Certification Statement (See addendum instructions)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature:		Date: 5/7/2015
Name of person signing above (printed or typed):	Edward G. Henifin	
Title:	General Manager	
Signature:		Date:
Name of person signing above (printed or typed):		
Title:		